

Fig 1  
Prior Art

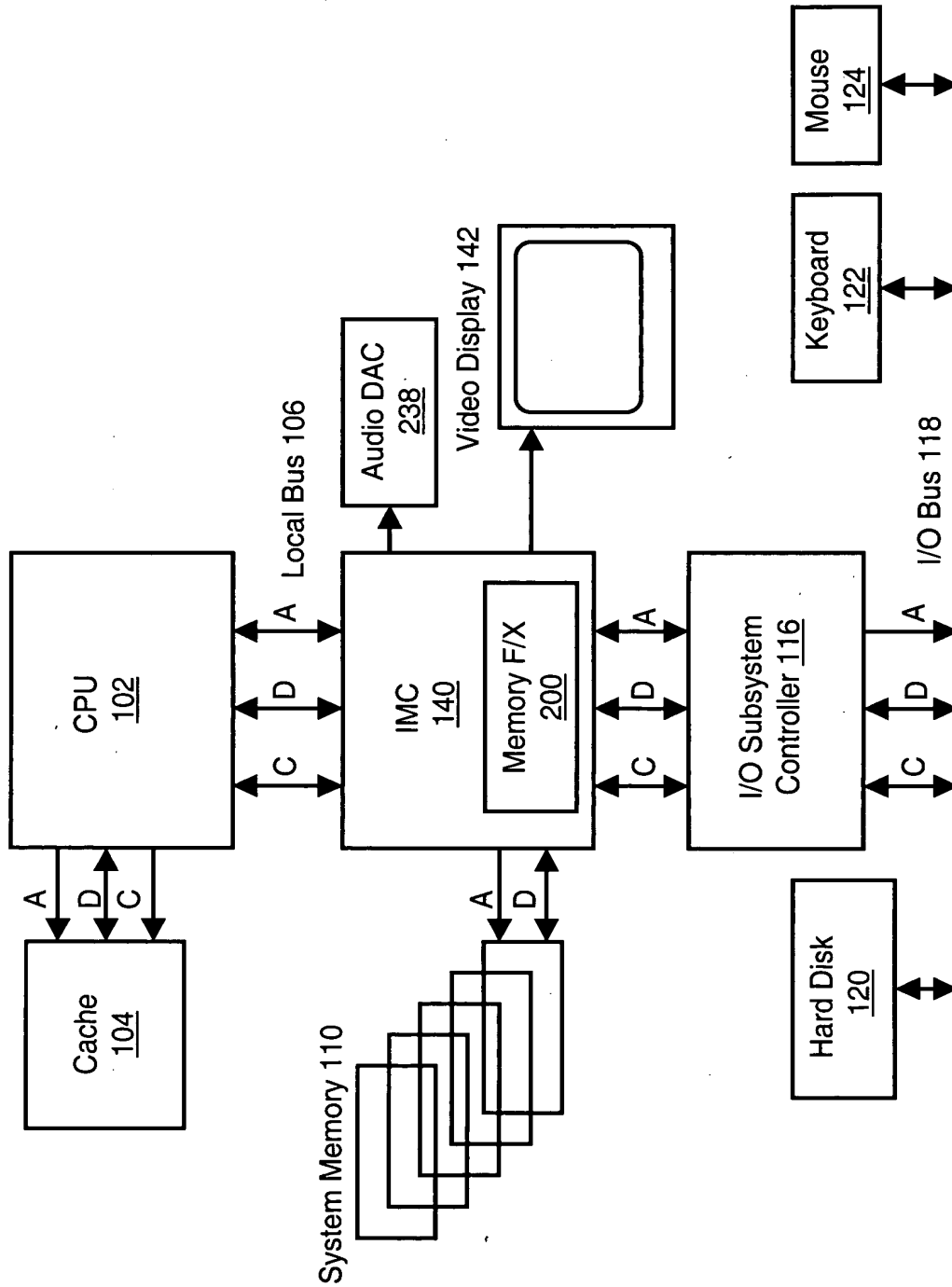


Fig. 2A

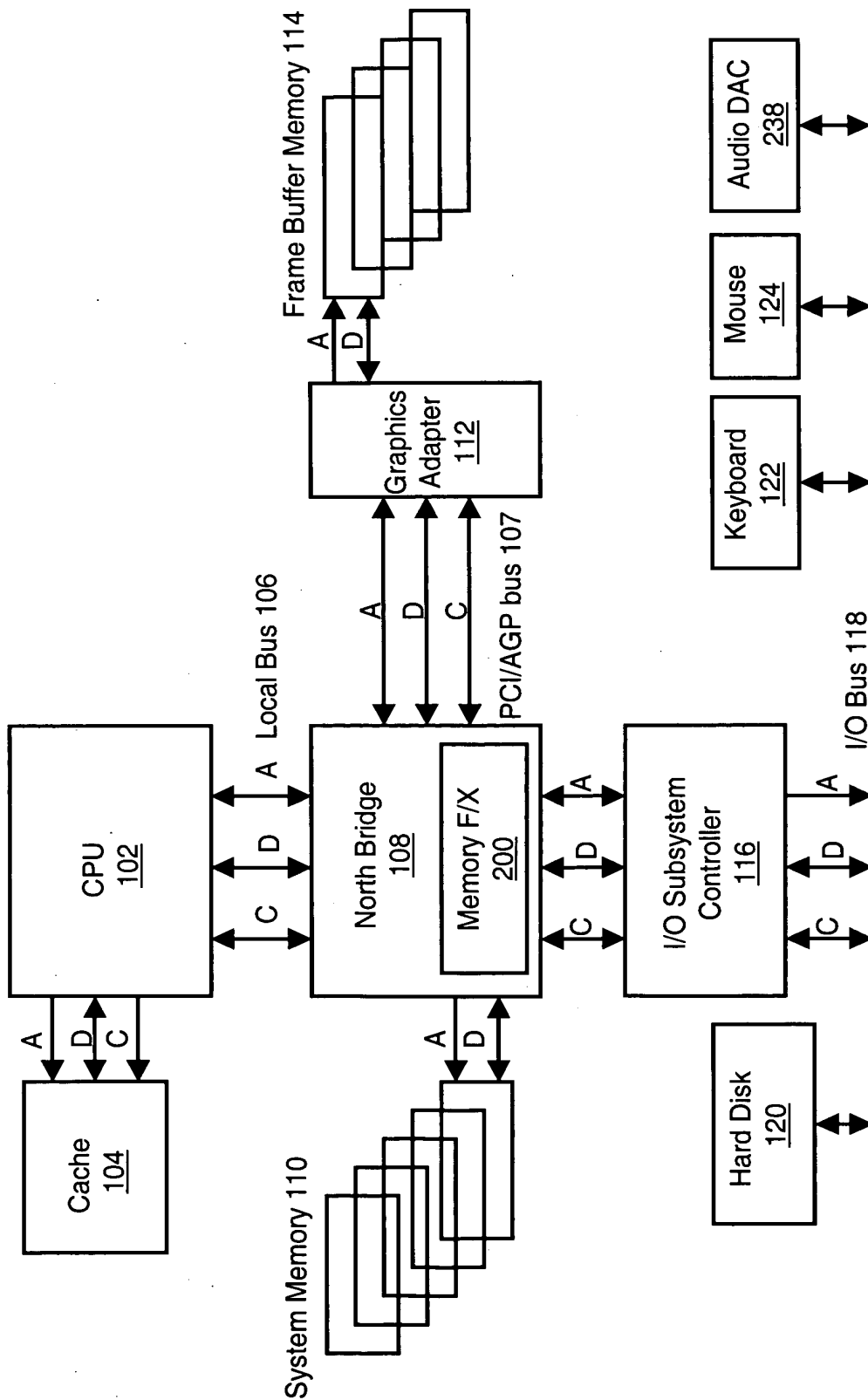


Fig. 2B

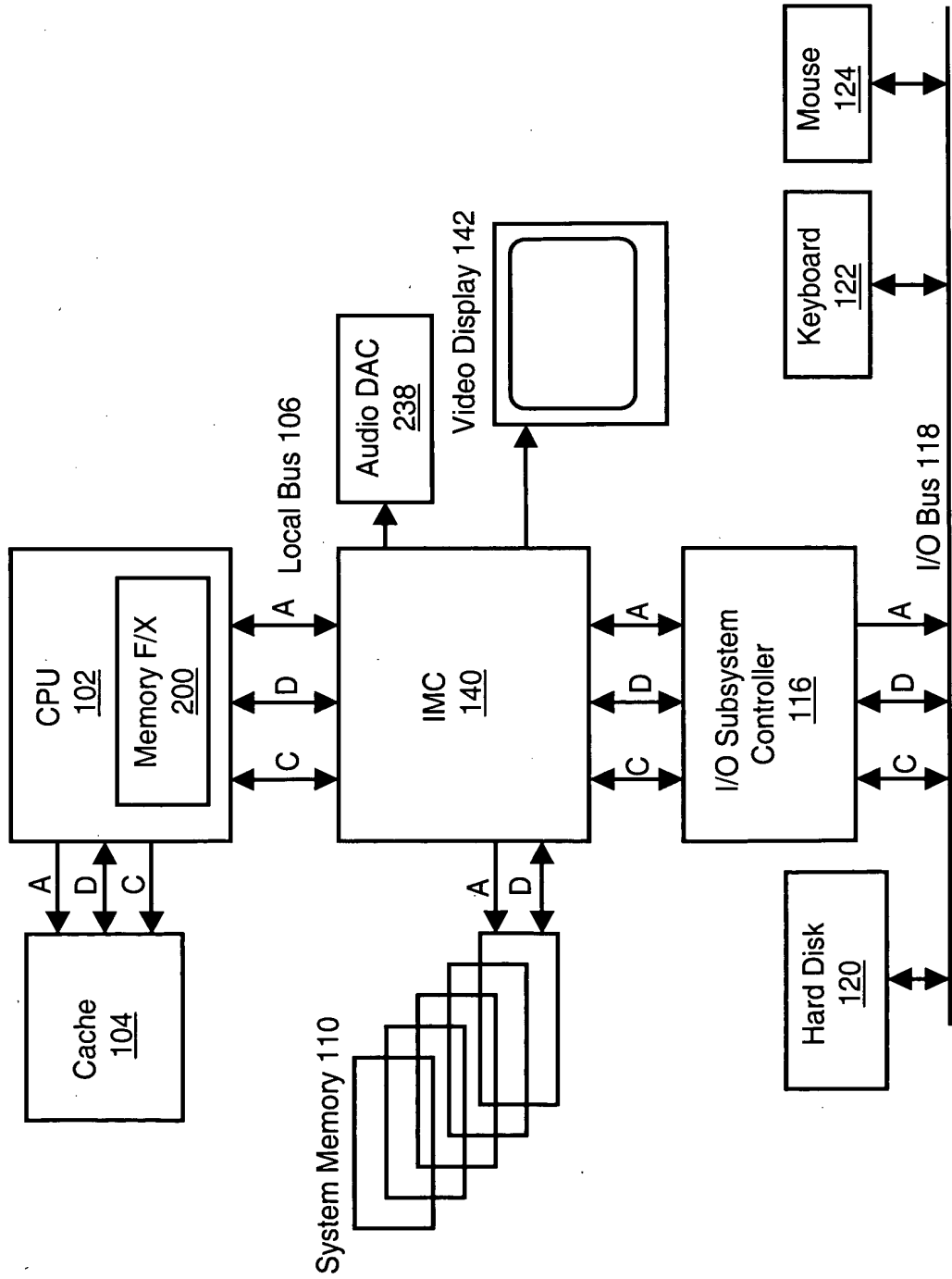


Fig. 2C

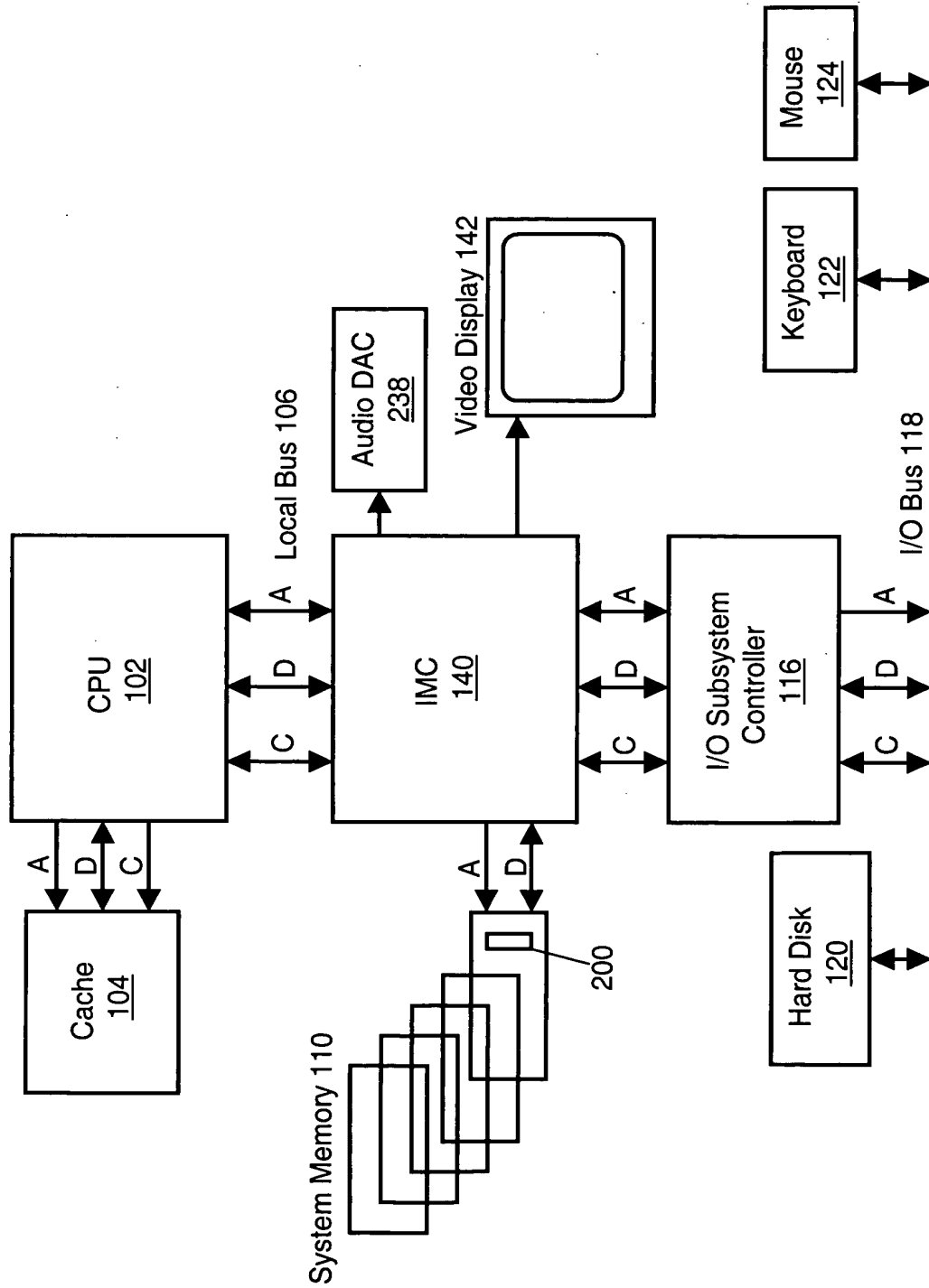


Fig. 2D

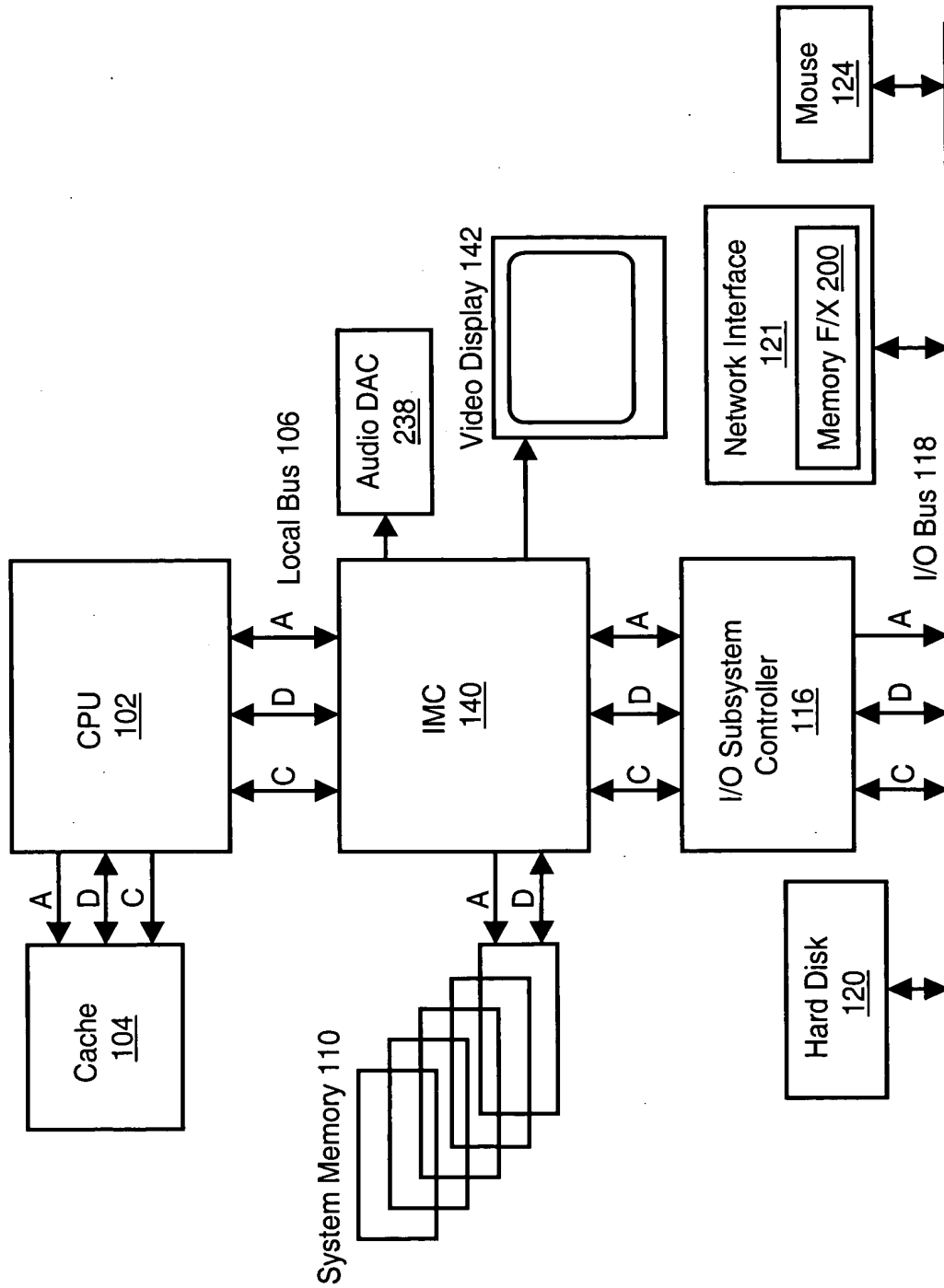


Fig. 2E

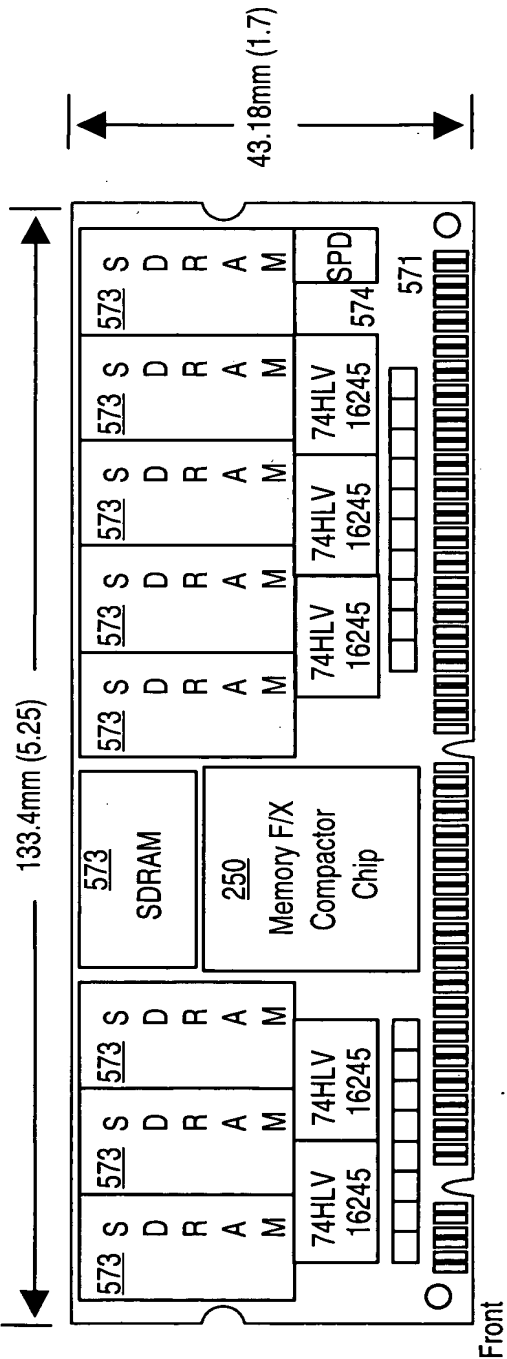


Fig. 3a

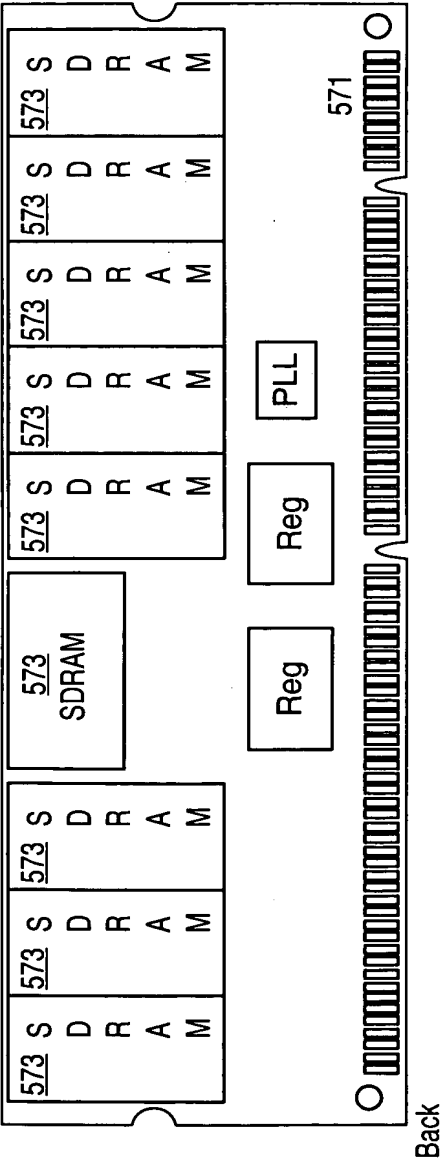
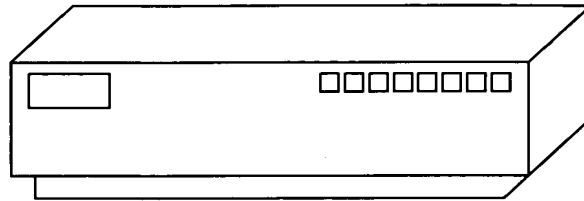


Fig. 3b

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Router 130

Fig. 4

10/20/2020 6:32:31 PM



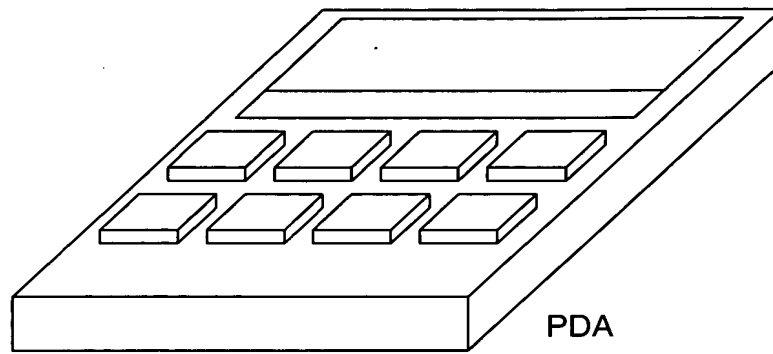


Fig. 5

WILEY-INTERSCIENCE

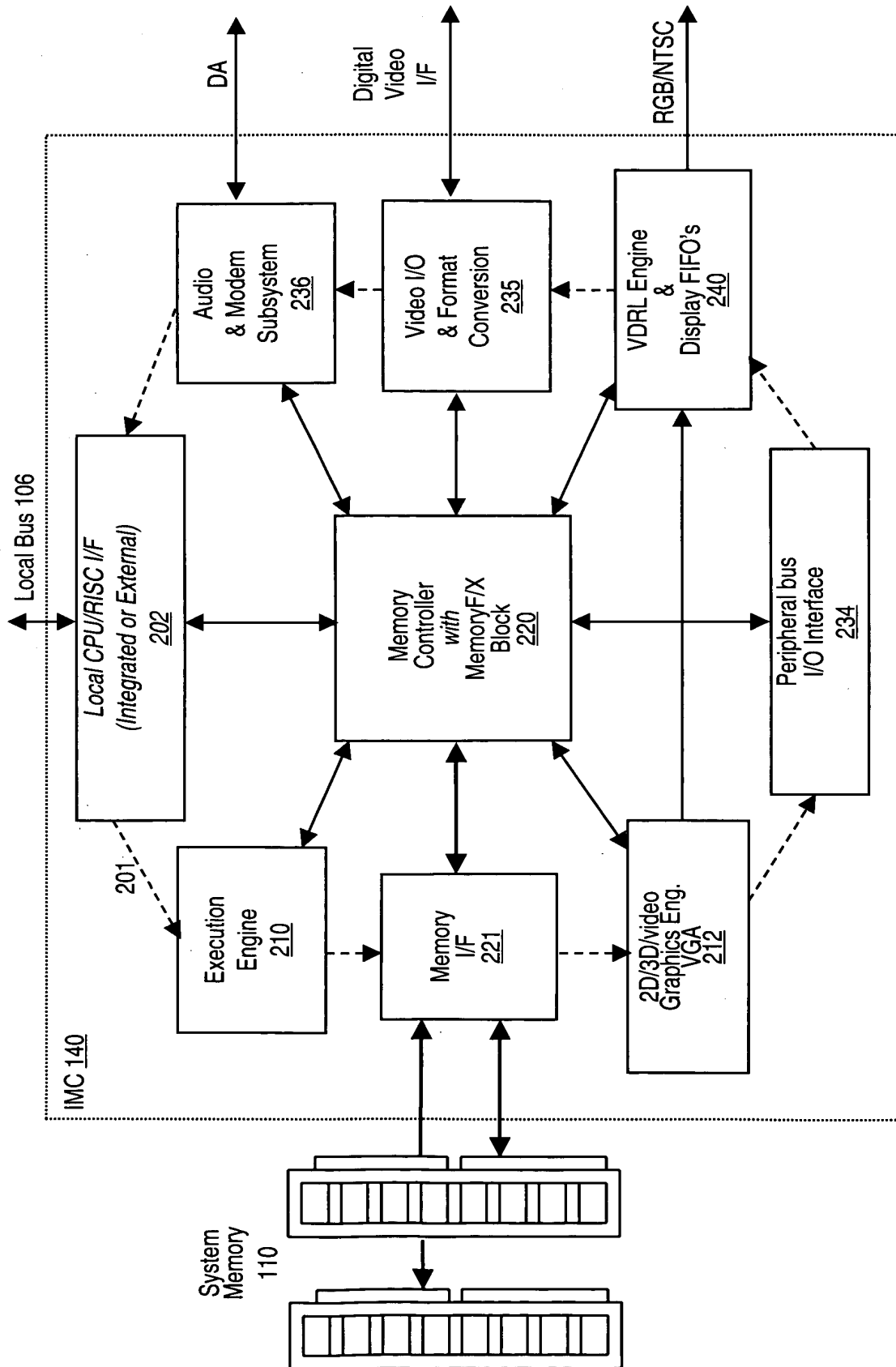


Fig. 6

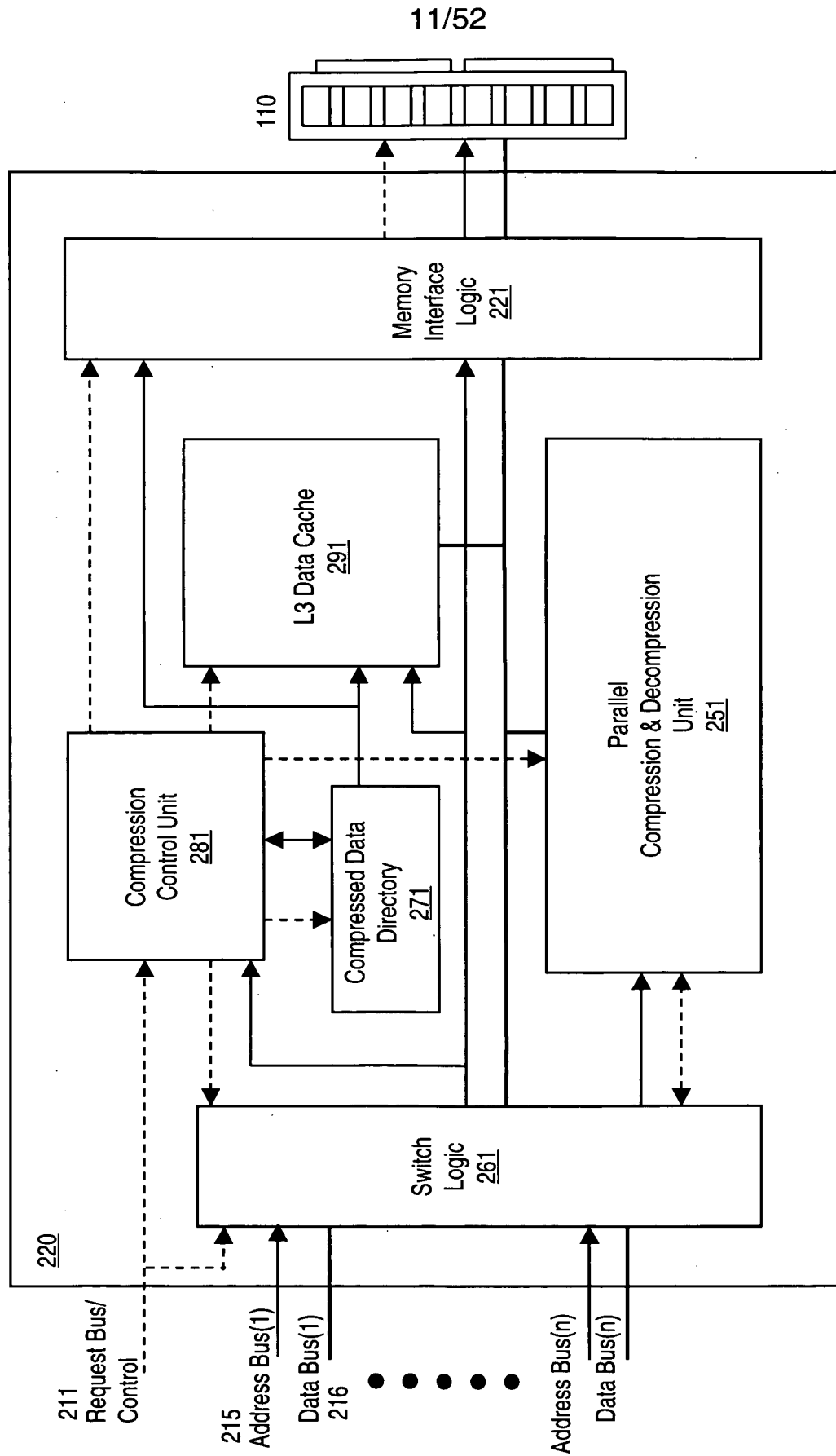
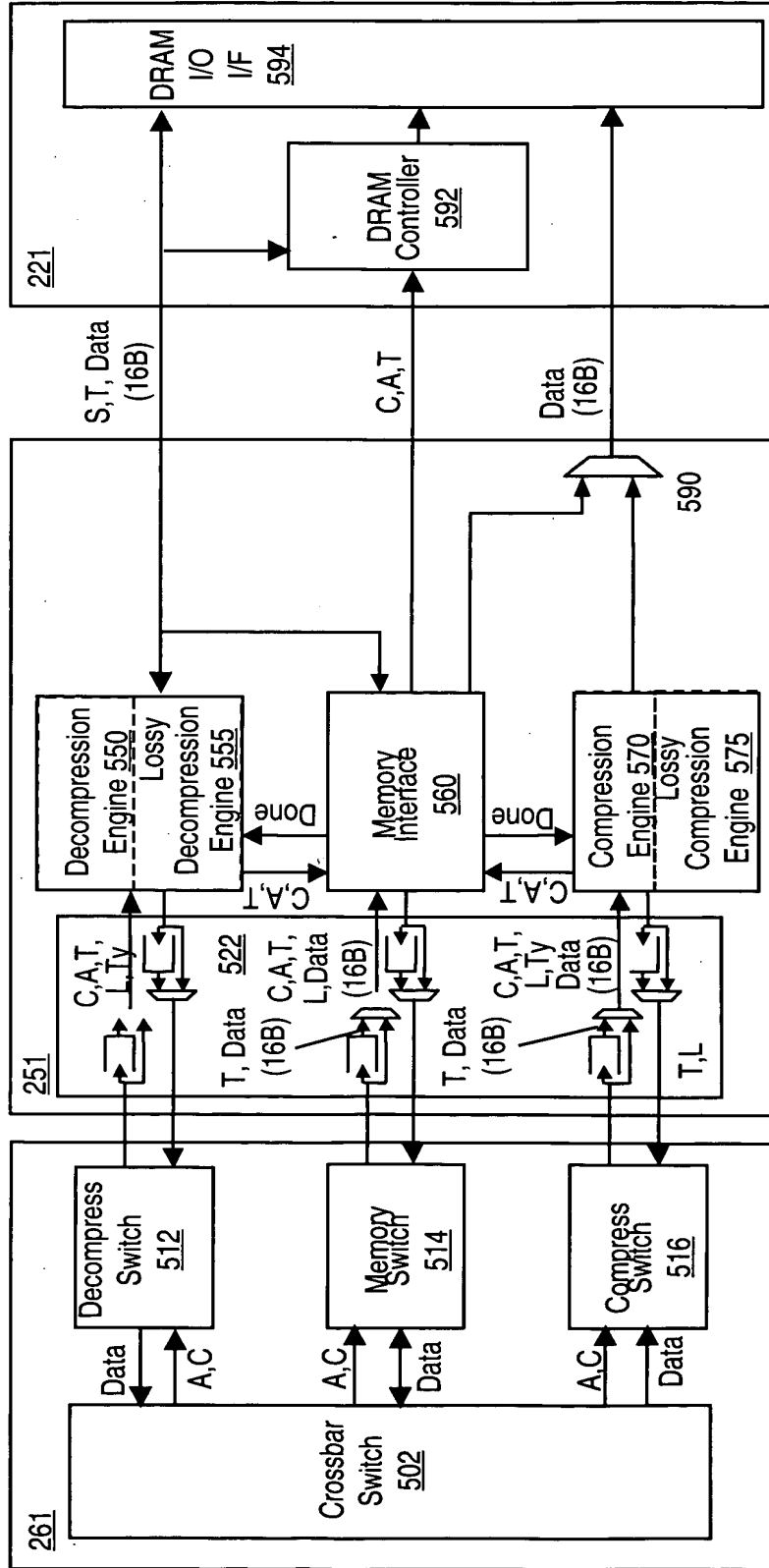


Fig. 7



Key:  
 C - Command  
 A - Address  
 T - Tag  
 L - Length  
 Ty - Type  
 S - Status

Fig. 8

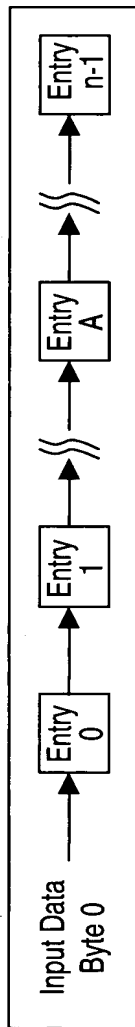


Fig. 9a  
( Prior Art)

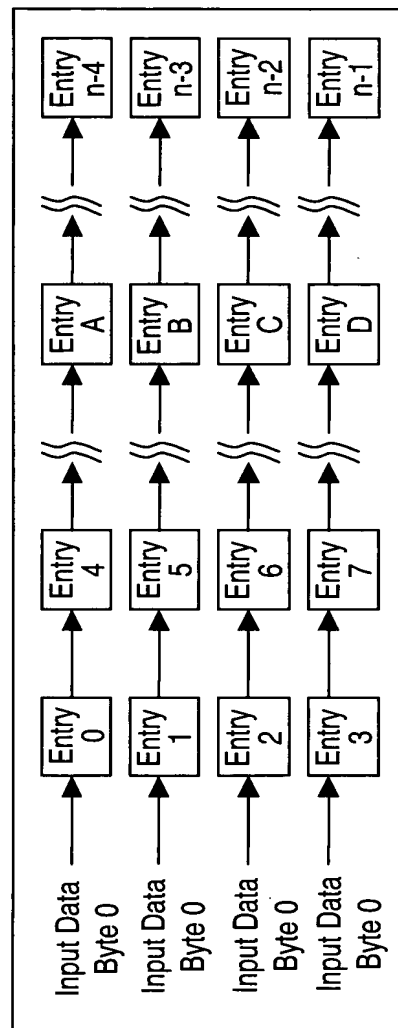


Fig. 9b  
( New Art)

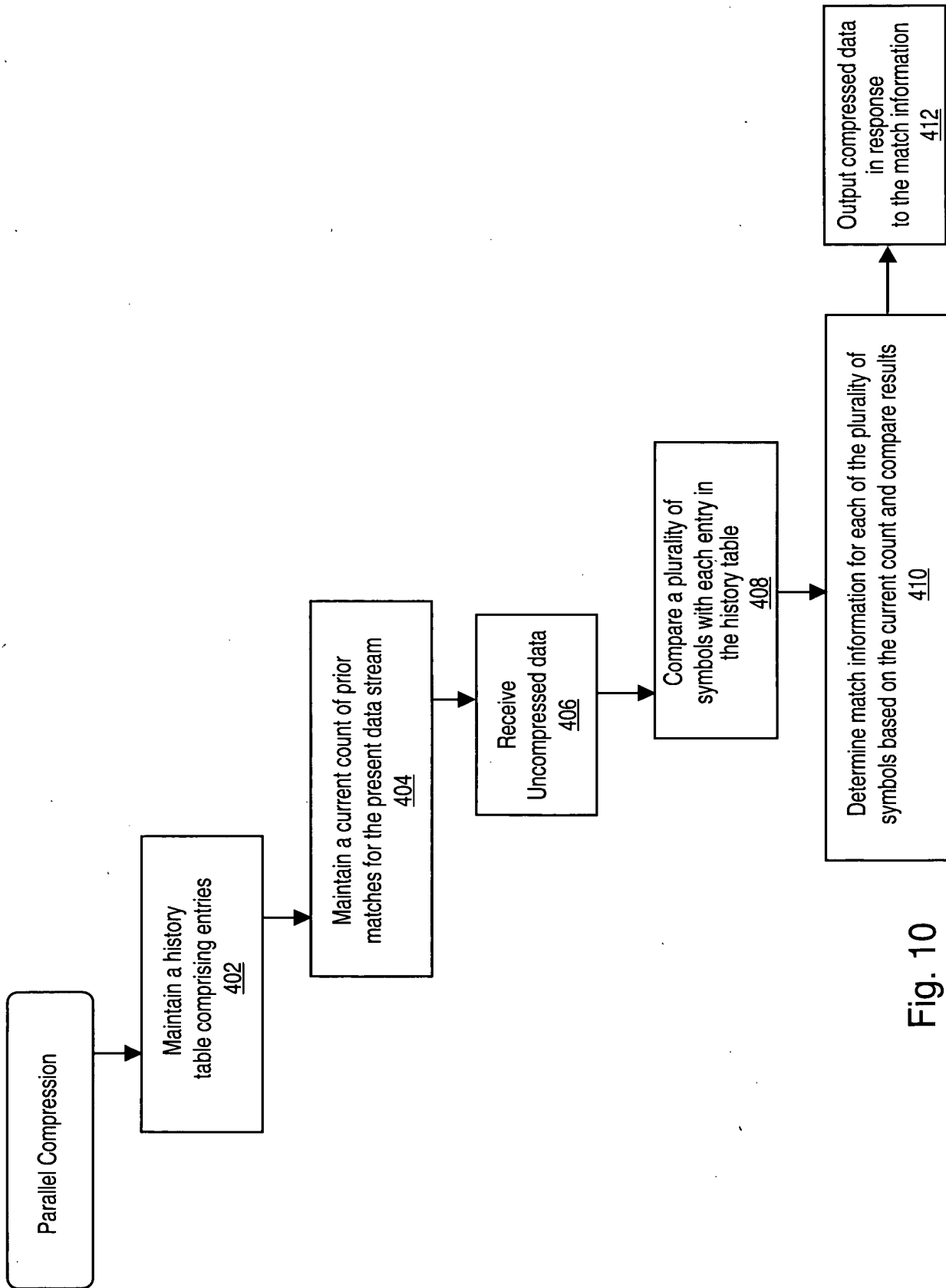


Fig. 10

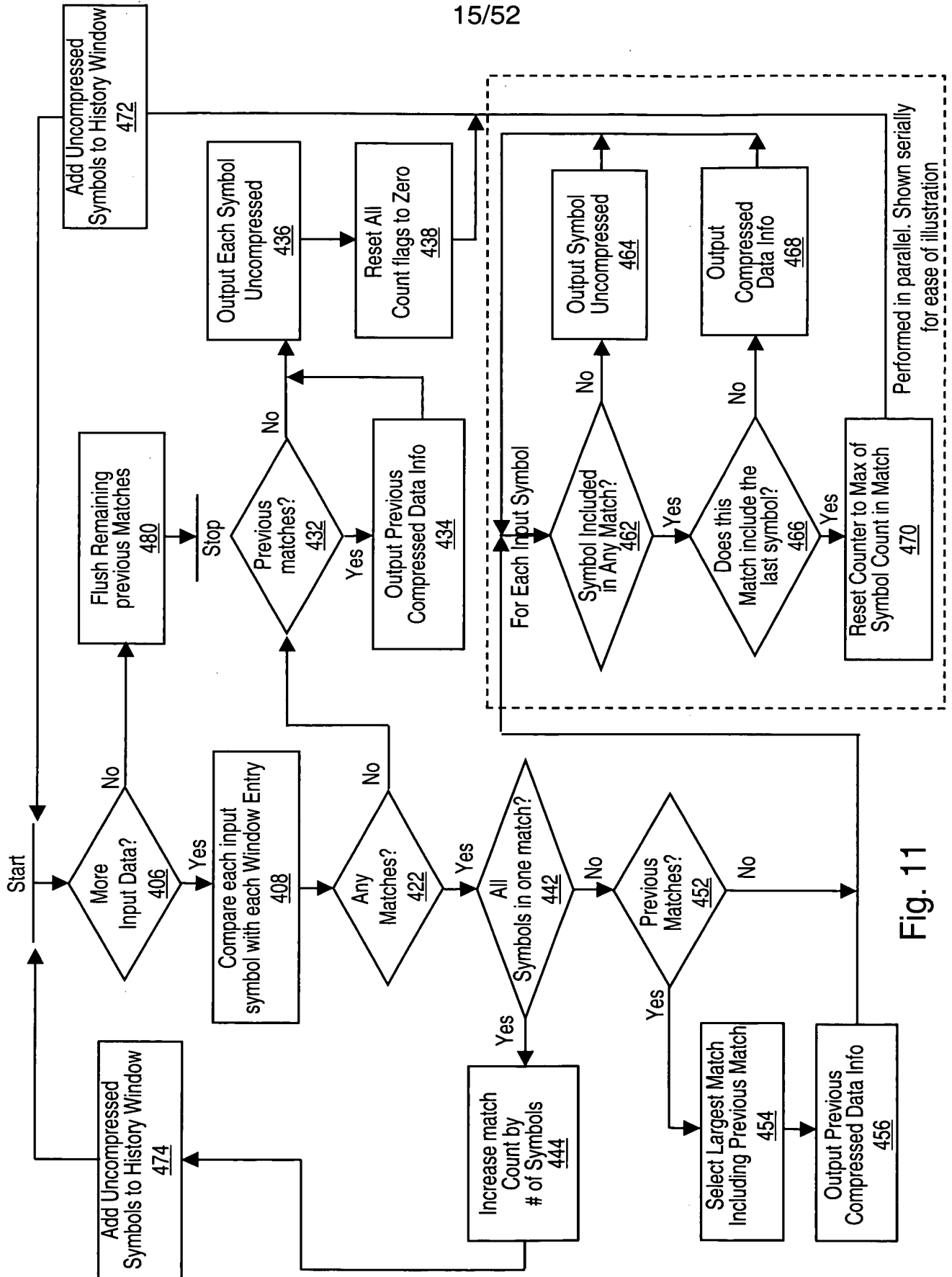


Fig. 11

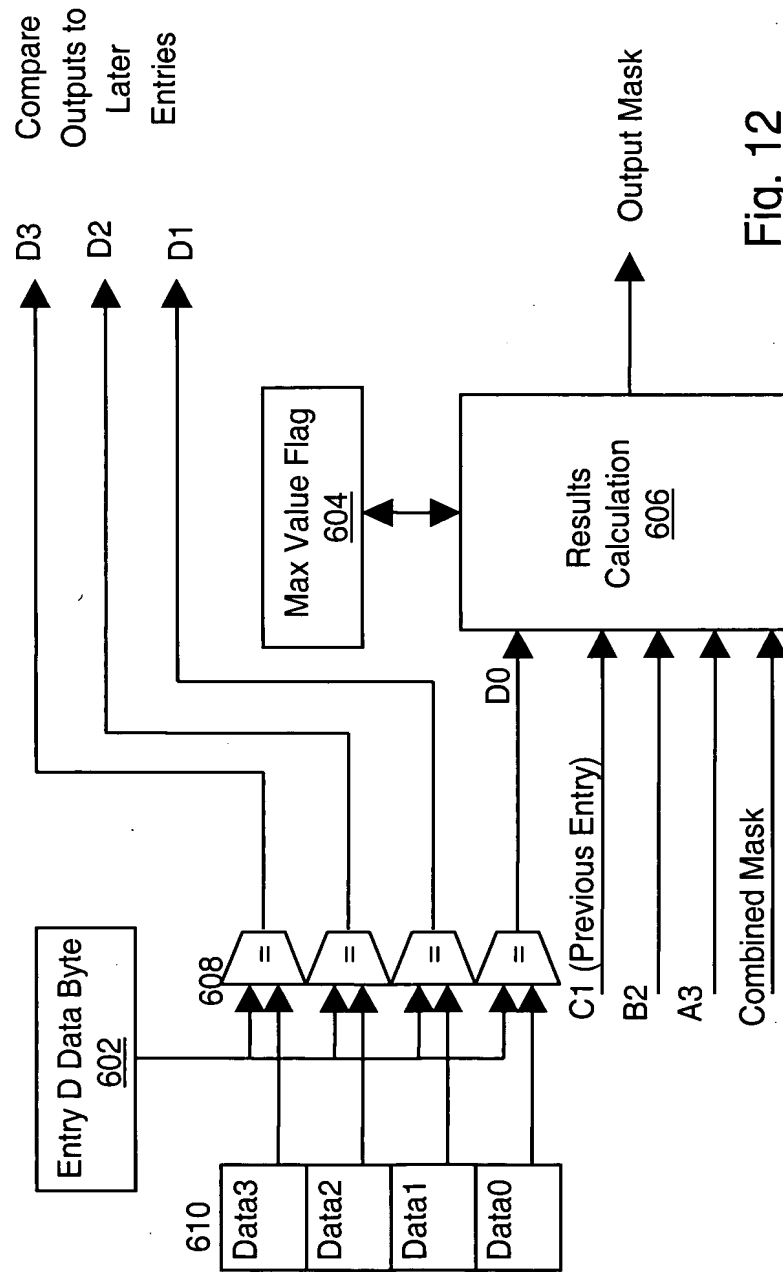


Fig. 12



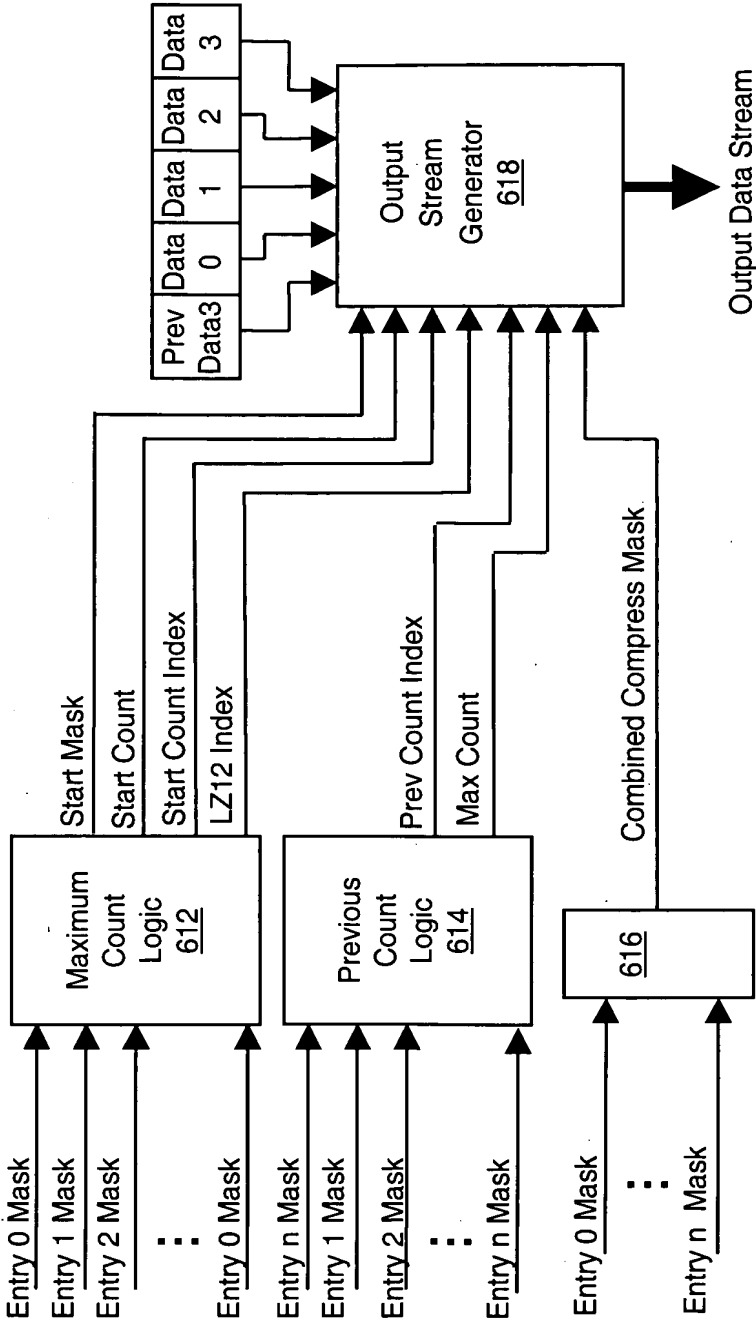


Fig. 13

Input Matches				Output	
D0	C1	B2	A3	Mask	
1	1	1	1	1111	
1	1	1	0	1110	
1	1	0	1	1101	
1	1	0	0	1100	
1	0	1	1	1011	
1	0	1	0	1010	
1	0	0	1	1001	
1	0	0	0	1000	
0	1	1	1	0111	
0	1	1	0	0110	
0	1	0	1	0101	
0	1	0	0	0100	
0	0	1	1	0011	
0	0	1	0	0010	
0	0	0	1	0001	
0	0	0	0	0000	

Figure 14a

Combined Mask	Count
0000	0
0001	1
0010	0
0011	2
0100	0
0101	1
0110	0
0111	3
1000	0
1001	1
1010	0
1011	2
1100	0
1101	1
1110	0
1111	Count+4

Figure 14b

Output Masks	Com bined Mask
M1234   4321 &~M1	0001
432 & ~M12	0010
43 & ~M123	0100
4 & ~M1234	1000
First valid row determines Combined Mask Output	
M-Max Count Flag 1-1 <sup>st</sup> Symbol Match 2-2 <sup>nd</sup> Symbol Match 3-3 <sup>rd</sup> Symbol Match 4-4 <sup>th</sup> Symbol Match	

Fig. 14c

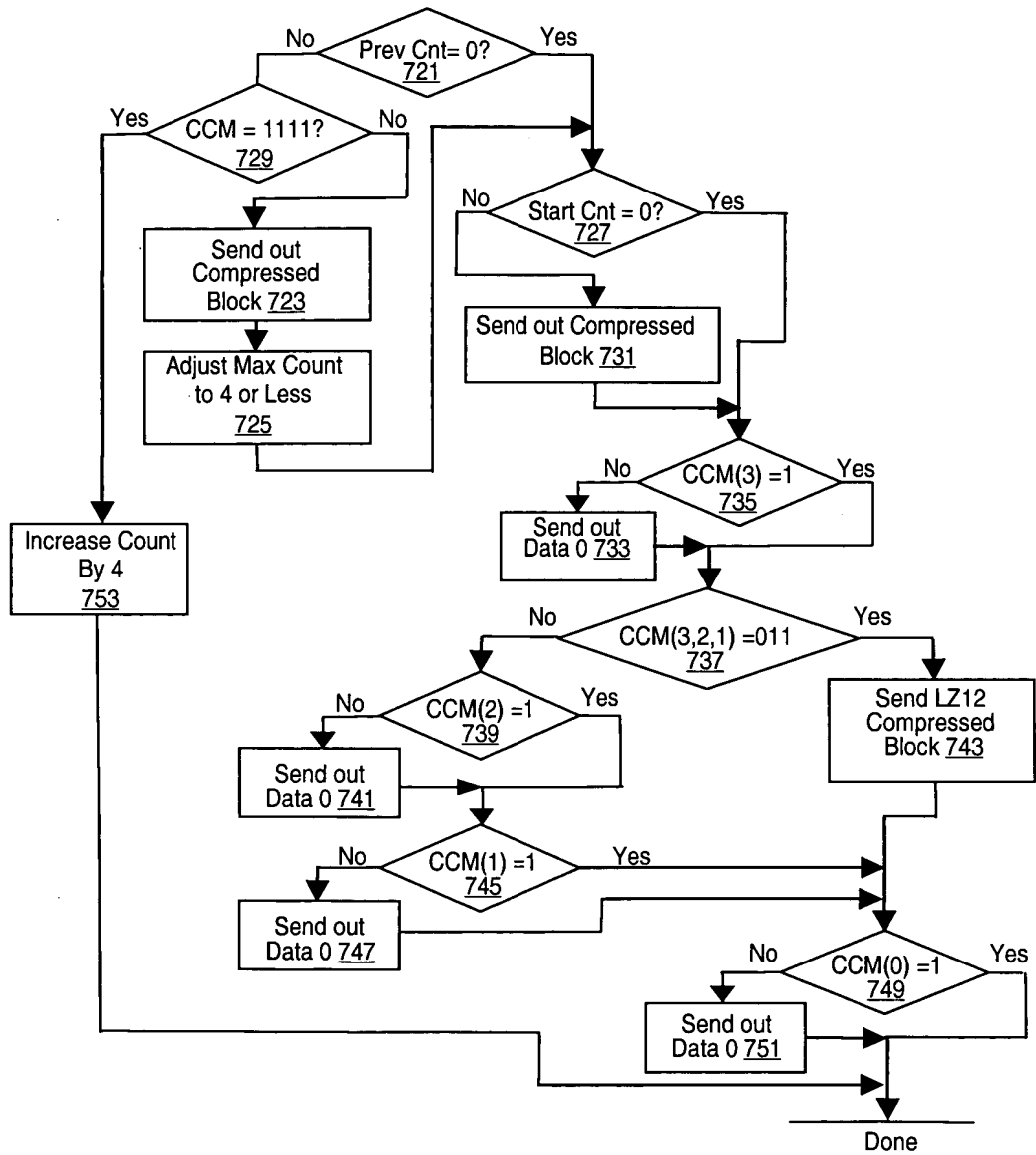


Fig. 15

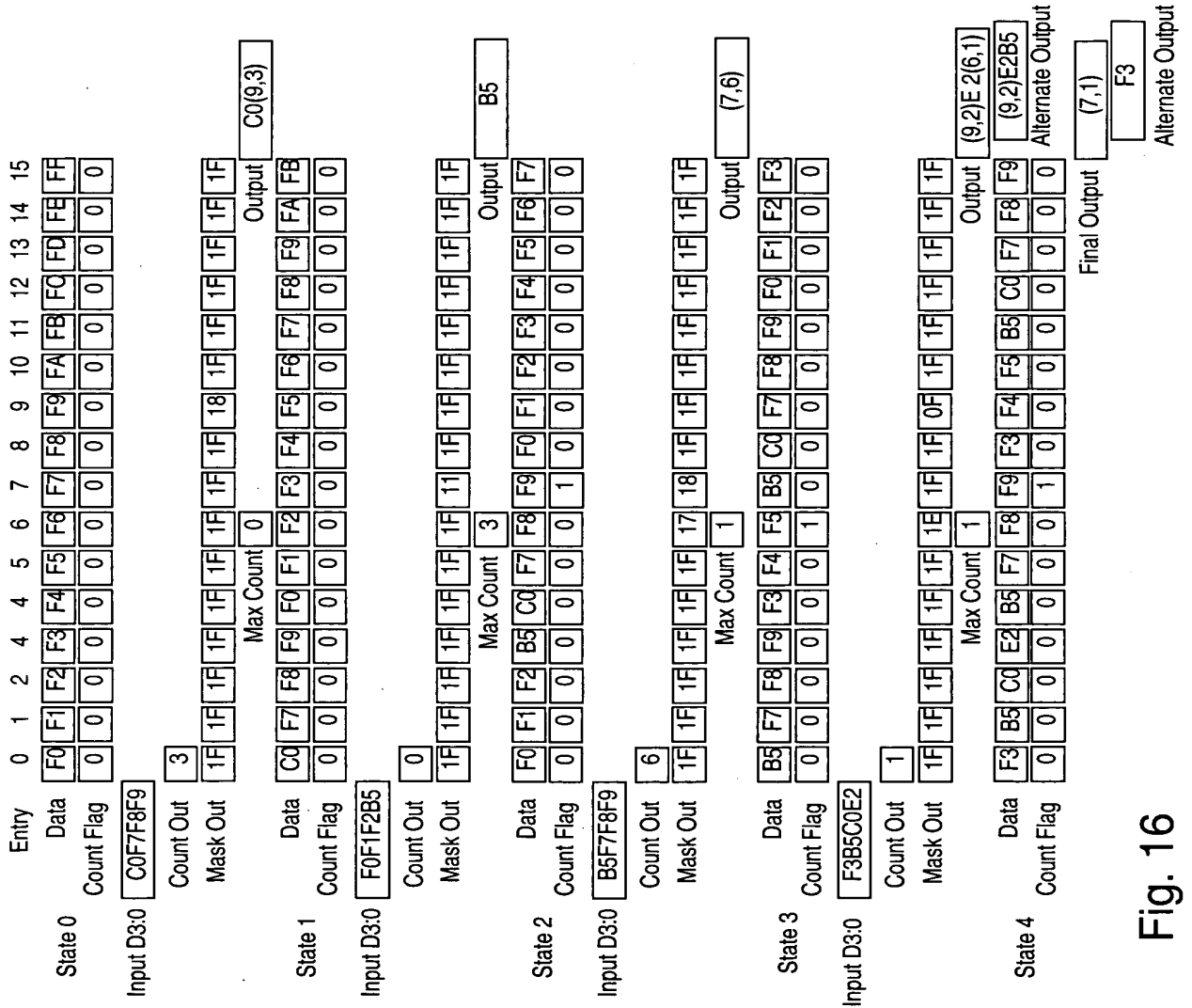


Fig. 16

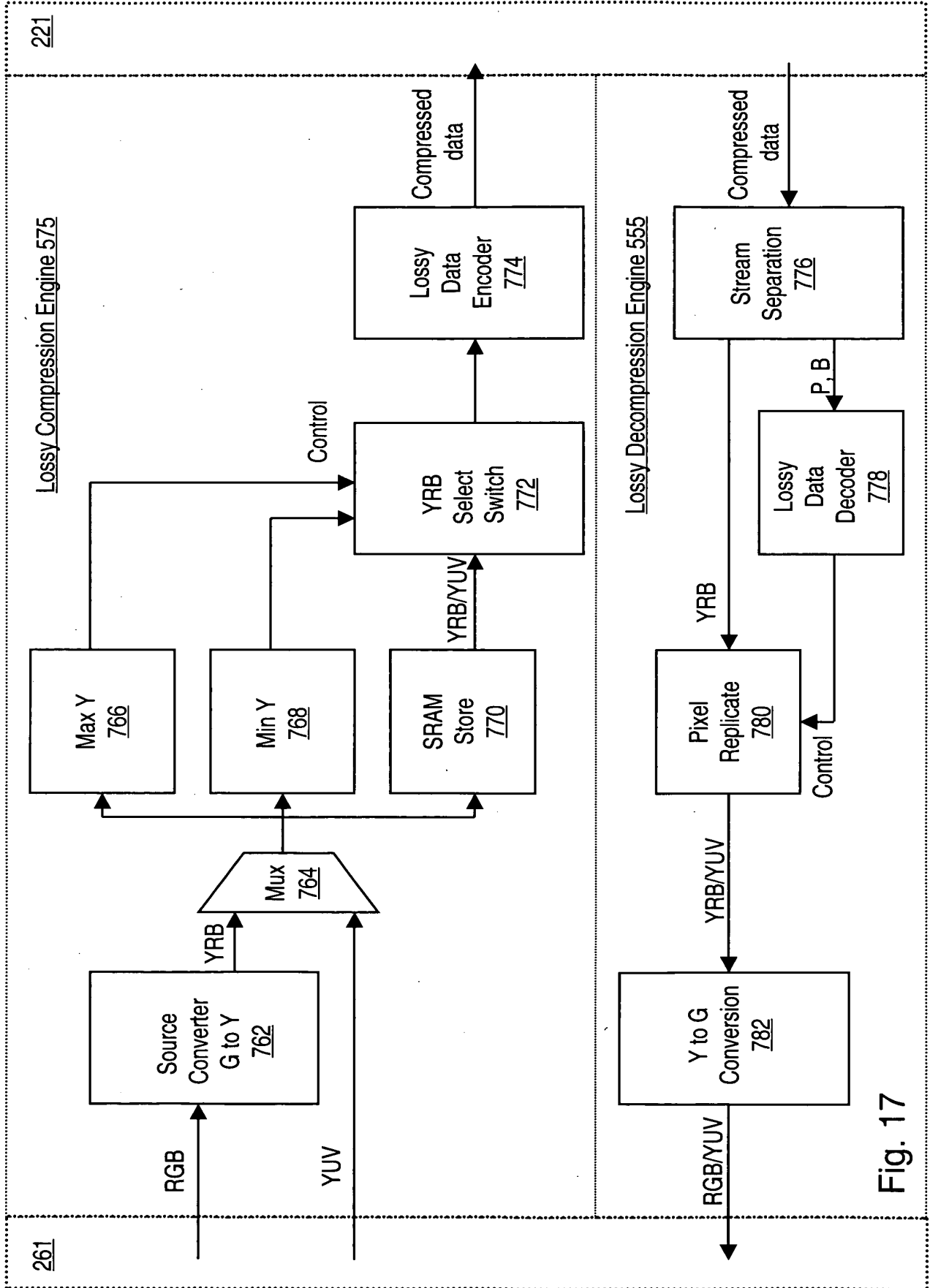


Fig. 17

Ymax = Ymin	1 color	Ymax	Ymax	Rmax	Bmax	11			3 Bytes
		6 bits	6 bits	5 bits	5 bits	2 bits			
Ymax != Ymin	2 colors	Ymax	Ymin	Rmax	Rmin	Bmax	Bmin	P bits	6 Bytes
		6 bits	6 bits	5 bits	5 bits	5 bits	5 bits	16 bits	
Ymax != Ymin	>2 colors	Ymin	Ymax	Rmax	Rmin	Bmax	Bmin	P bits	8 Bytes
		6 bits	6 bits	5 bits	5 bits	5 bits	5 bits	32 bits	

Fig. 18

Ymax = Ymin	Amax = Amin = 0x00	1 color	Ymax	Rmax	Bmax	00				3 Bytes
			6 bits	5 bits	5 bits	2 bits				
Ymax = Ymin	Amax = Amin = 0xFF	1 color	Ymax	Rmax	Bmax	11				3 Bytes
			6 bits	5 bits	5 bits	2 bits				
Ymax = Ymin	Amax = Amin != 00 or FF	1 color	Ymax	Rmax	Bmax	01	Amax	Amin		4/5 Bytes
			6 bits	5 bits	5 bits	2 bits	4/8 bits	4/8 bits		
Ymax = Ymin	Amax != Amin	1 color	Ymax	Rmax	Bmax	01	Amax	Amin	P bits	6/7 Bytes
		2 Alphas	6 bits	5 bits	5 bits	2 bits	4/8 bits	4/8 bits	16 bits	
Ymax = Ymin	Amax != Amin	1 color	Ymax	Rmax	Bmax	10	Amax	Amin	P bits	8/9 Bytes
		>2 Alphas	6 bits	5 bits	5 bits	2 bits	4/8 bits	4/8 bits	32 bits	
Ymax != Ymin	X	2 colors	Ymin	Rmax	Rmin	Bmax	Bmin	Amax	Amin	P bits
			6 bits	5 bits	5 bits	5 bits	5 bits	4/8 bits	4/8 bits	16 bits
Ymax != Ymin	X	>2 colors	Ymin	Rmax	Rmin	Bmax	Bmin	Amax	Amin	P bits
			6 bits	5 bits	5 bits	5 bits	5 bits	4/8 bits	4/8 bits	32 bits

Fig. 19

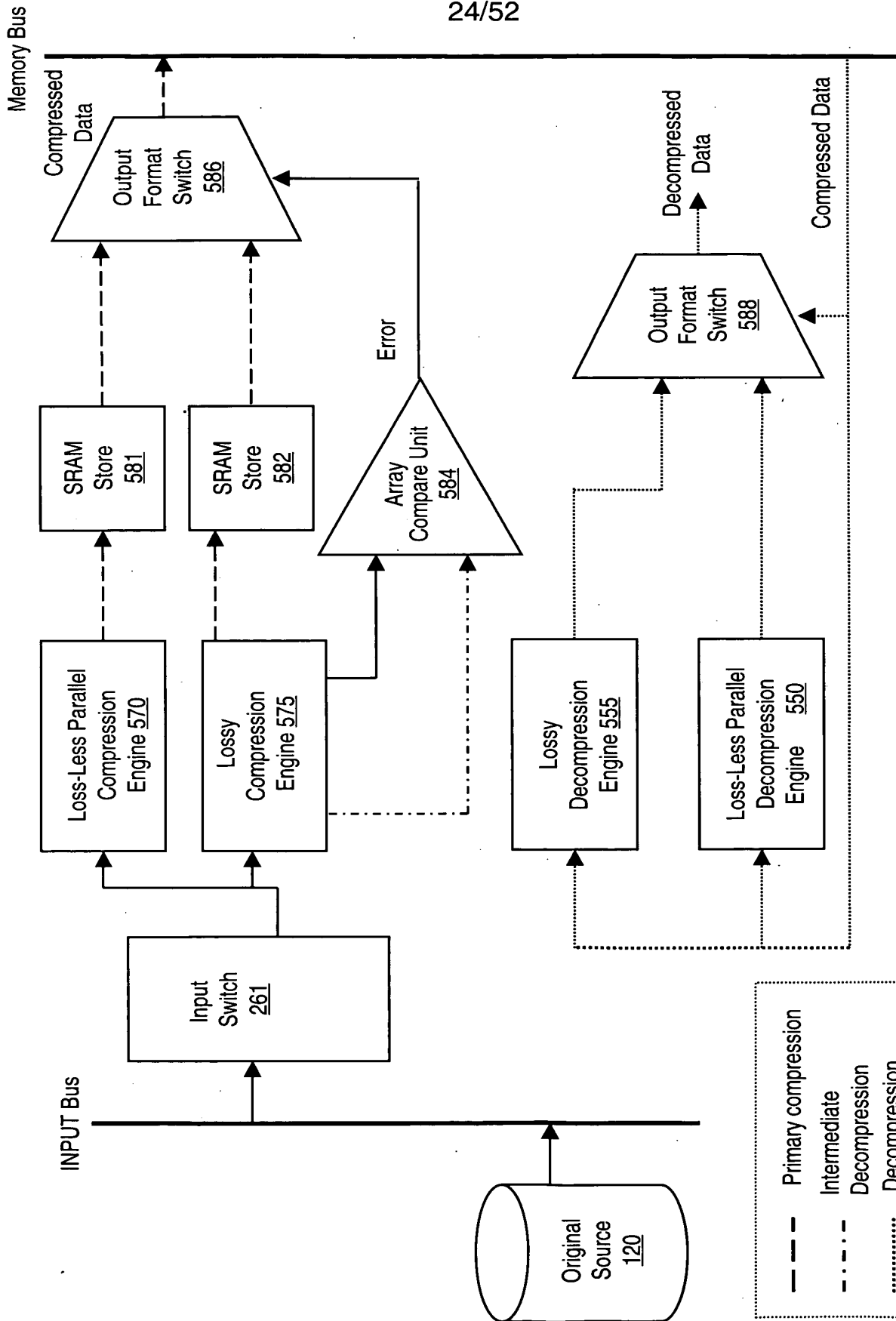


Fig. 20



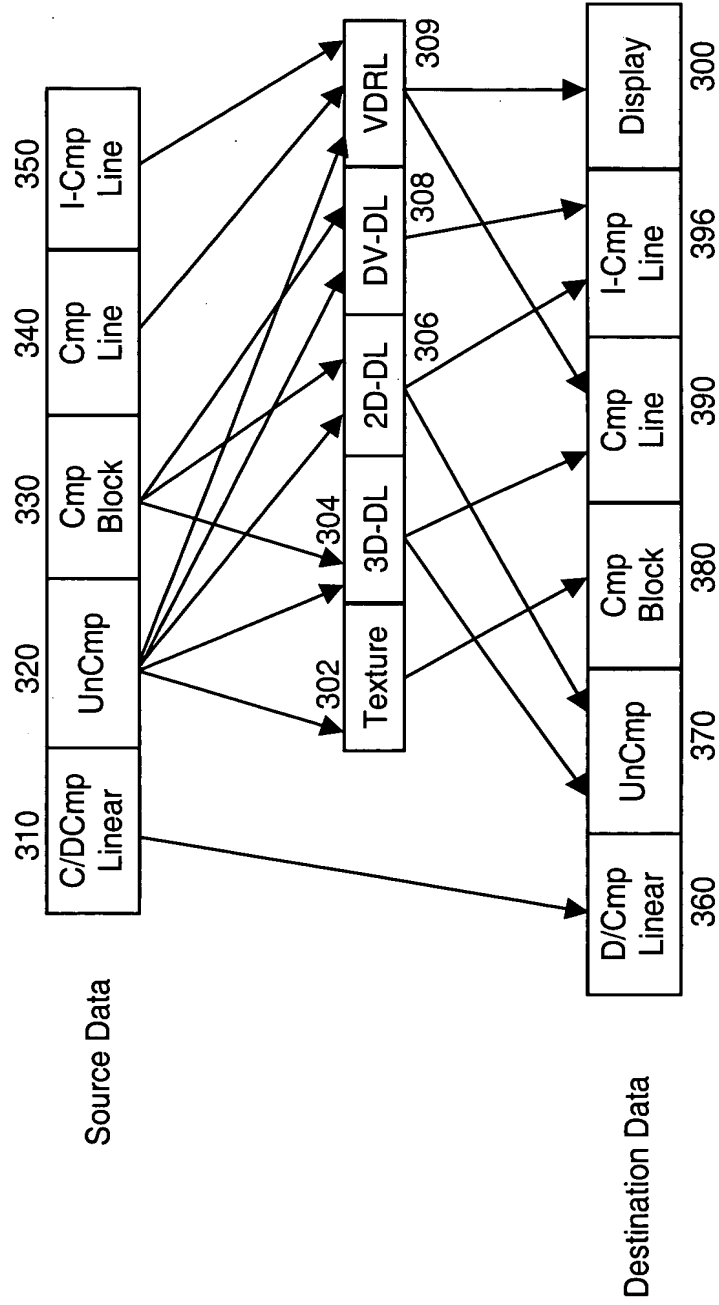


Fig. 21

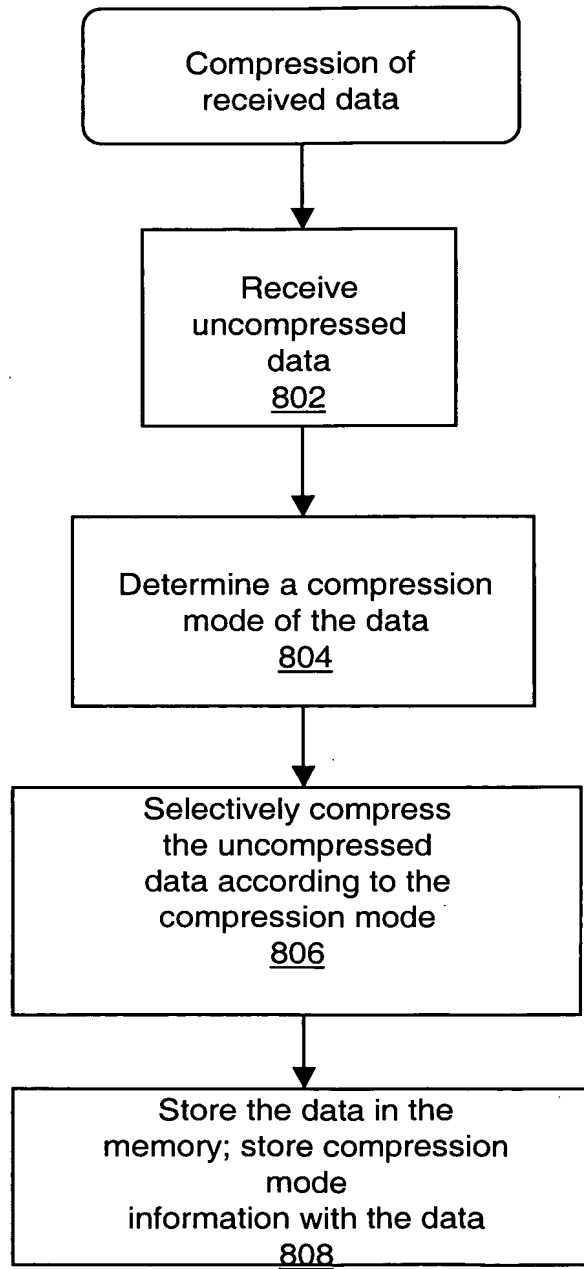


Fig. 22

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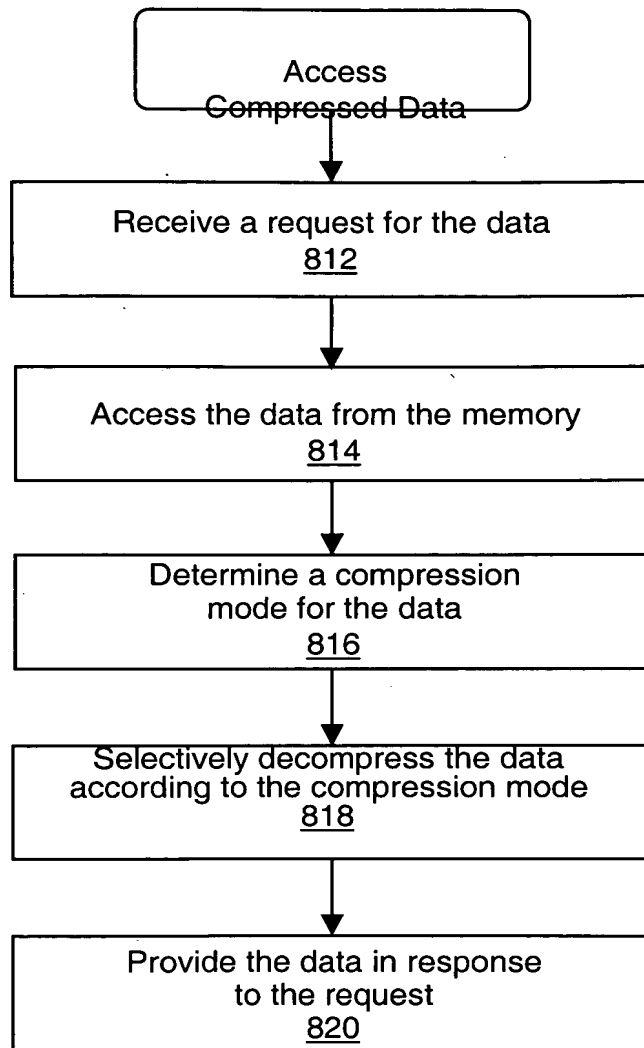


Fig. 23

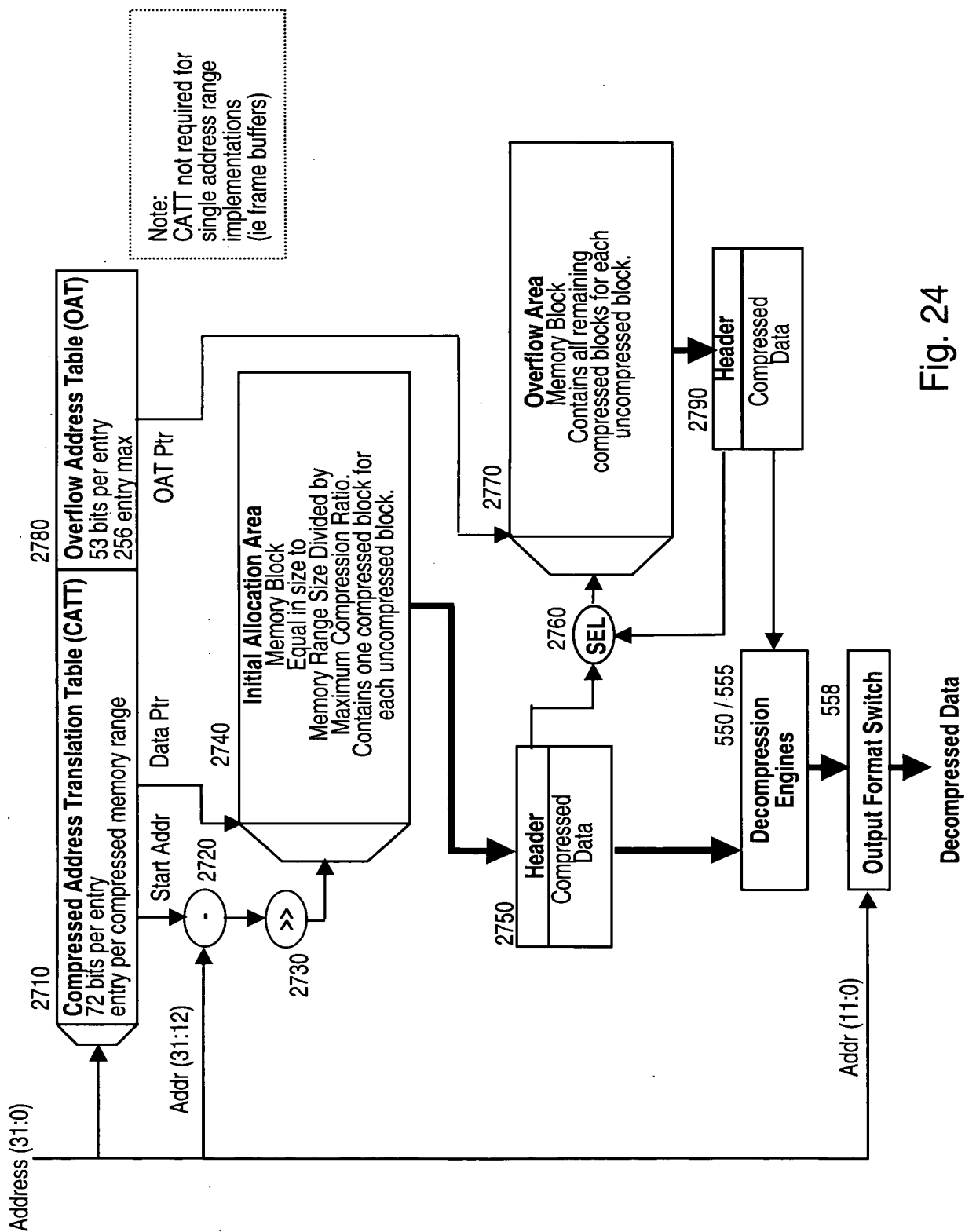


Fig. 24

### Memory Allocation Fields

Compressed Address Translation Table (CATT) – 128 Entry Design Limit				
Starting Addr	Ending Addr	Type	Data Ptr	OAT Ptr
20 bits	20 bits	4 bits	20 bits	8 bits
4GB Addressability		Compressed		
4K Boundry	4K Boundry	Blk Size	4K Boundry	4K Boundry
Overflow Address Table (OAT) – 256 Entry Max				
Overflow Ptr	Next Block Ptr	Next OAT Ptr		Next OAT Valid
20 bits	24 bits	8 bits		1 bit
4 GB Addressability		Points to next entry		
4K Boundry		in this table		
Initial Header Description				
Value	# of bits	Meaning		
0	1	Last Block/Unused		
10 A (20 bits)	22	The next block is at offset A in the Overflow Area		
11 1A(8+20 bits)	30	The next block is at offset A in the Overflow Area of OAT entry I		
Overflow Header Description				
Value	# of bits	Meaning		
00	2	Last Block/Unused		
01	2	The next block follows physically after this one		
10A (8 bits)	10	The next block is A blocks before this one (or after?)		
110A (20 bits)	23	The next block is at offset A in the Overflow Area		
111 1A (8+20 bits)	31	The next block is at offset A in the Overflow Area of OAT entry I		

Fig. 25

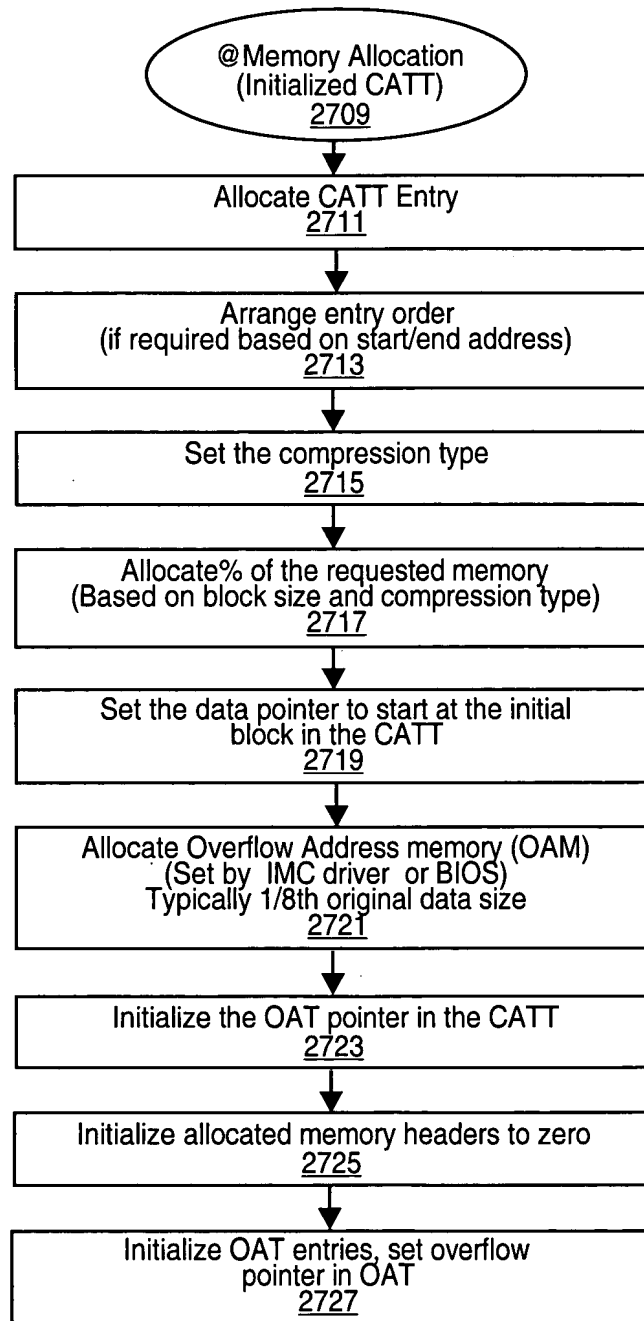


Fig. 26

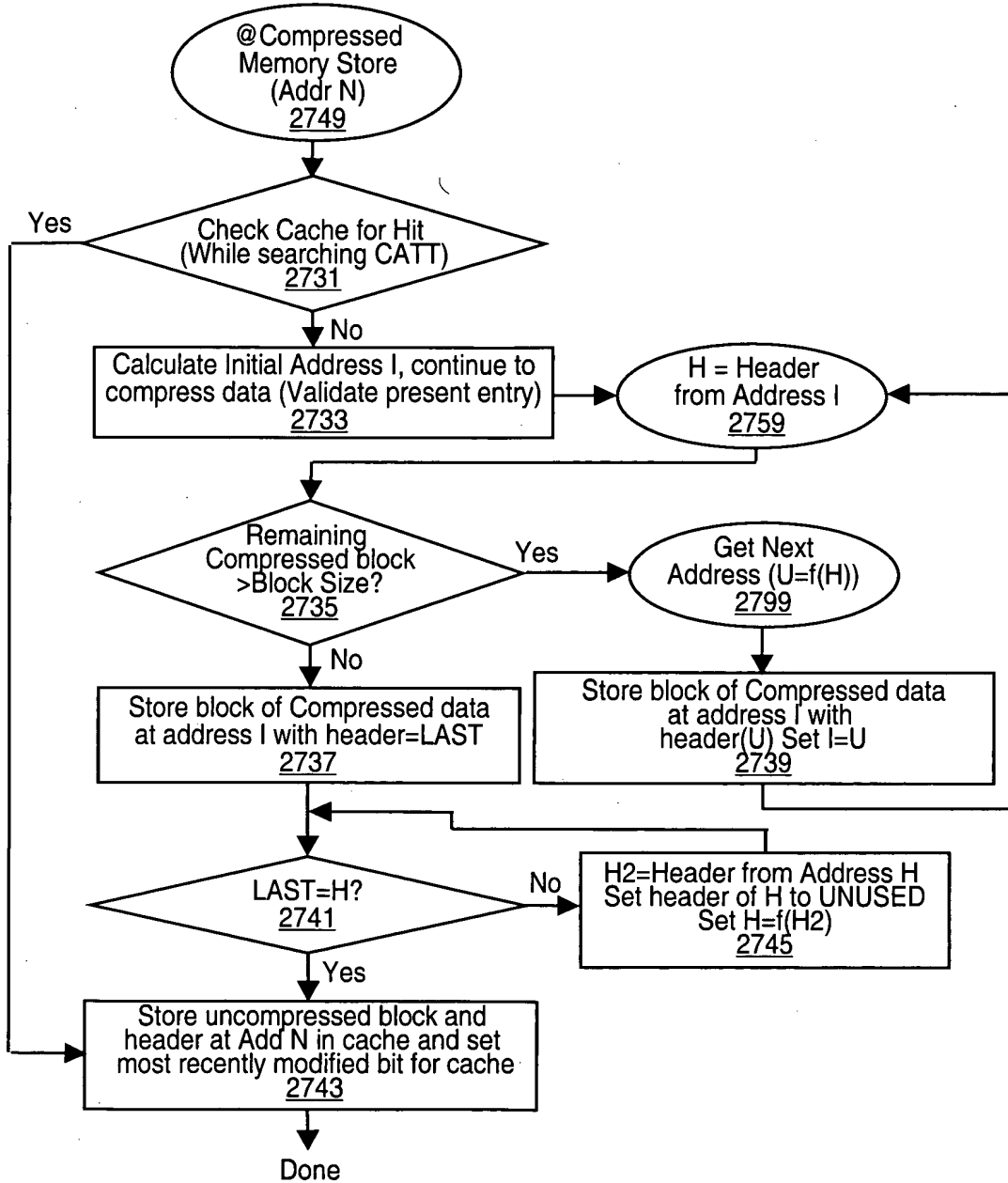


Fig. 27

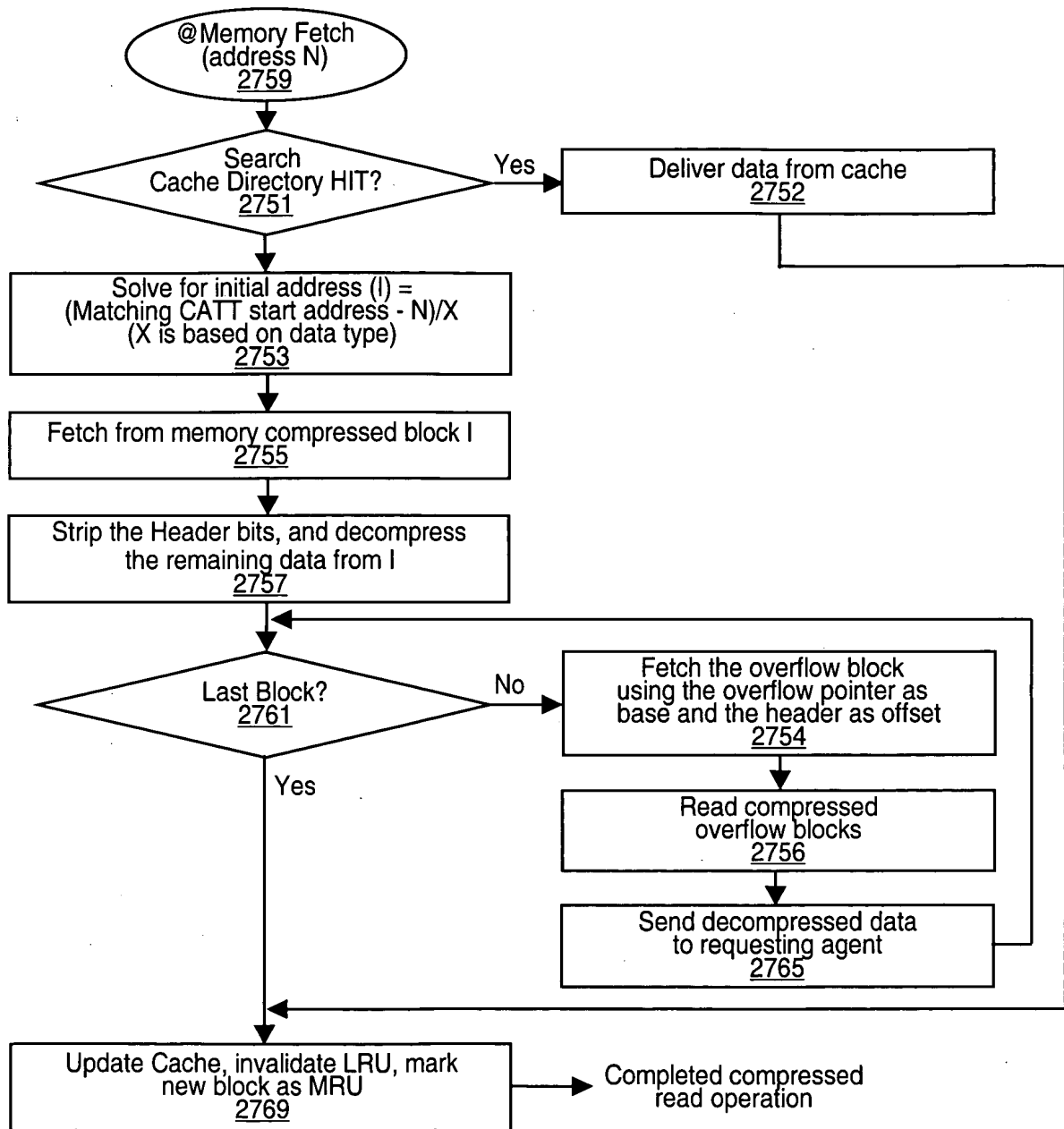


Fig. 28



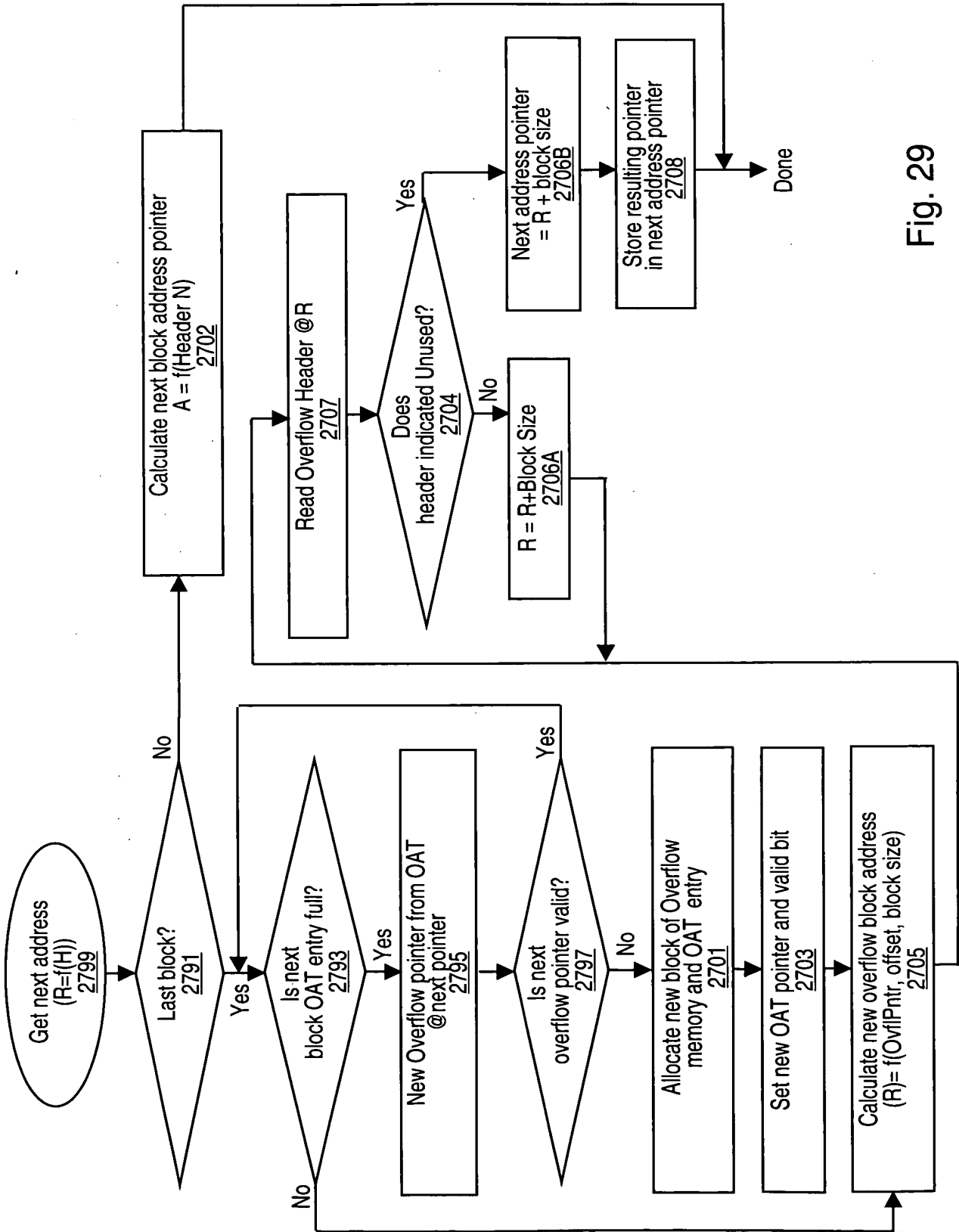


Fig. 29

Uncomp Block Bytes	Type	Initial Block Size Bytes	Overflow Block Size Bytes	Max Comp Ratio (X:1)	Initial Allocation	Header w/o OF	Header w/ OF Non-Frag	Header w/ OF Fragmented
4096	8	256	64	16	6%	0.0%	0.4%	4.1%
2048	7	128	64	16	6%	0.1%	0.5%	4.2%
1024	6	64	64	16	6%	0.2%	0.6%	4.3%
512	5	64	64	8	13%	0.2%	0.9%	4.3%
256	4	64	64	4	25%	0.2%	1.4%	4.3%
128	3	32	32	4	25%	0.4%	2.8%	8.8%
64	2	32	16	2	50%	0.4%	5.1%	13.6%
32	1	32	8	1	100%	0.4%	8.9%	11.5%

Fig. 30

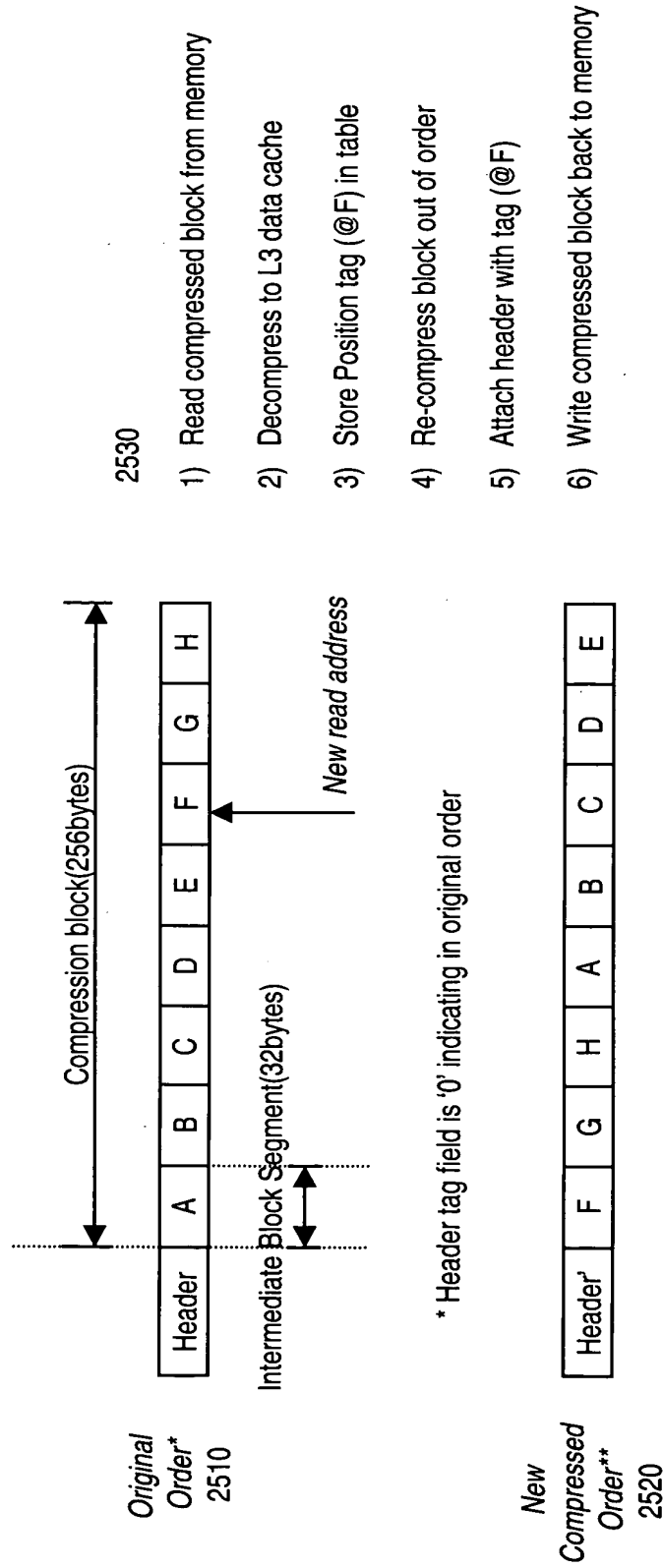


Fig. 31

Bytes Compressed	Flag	Index	Count	Data	Bits Used
0	0	-	-	8b	9
1	10	6b	-	-	8
2	1100	6b	-	-	10
3	1101	6b	-	-	10
4	1110	6b	-	-	10
5	1111000	6b	-	-	13
6	1111001	6b	-	-	13
7	1111010	6b	-	-	13
8	1111011	6b	-	-	13
9	1111100	6b	-	-	13
10	1111101	6b	-	-	13
11	1111110	6b	-	-	13
>11	1111111	6b	12b	-	25

Fig. 32

TABLE 1: SERIAL DATA

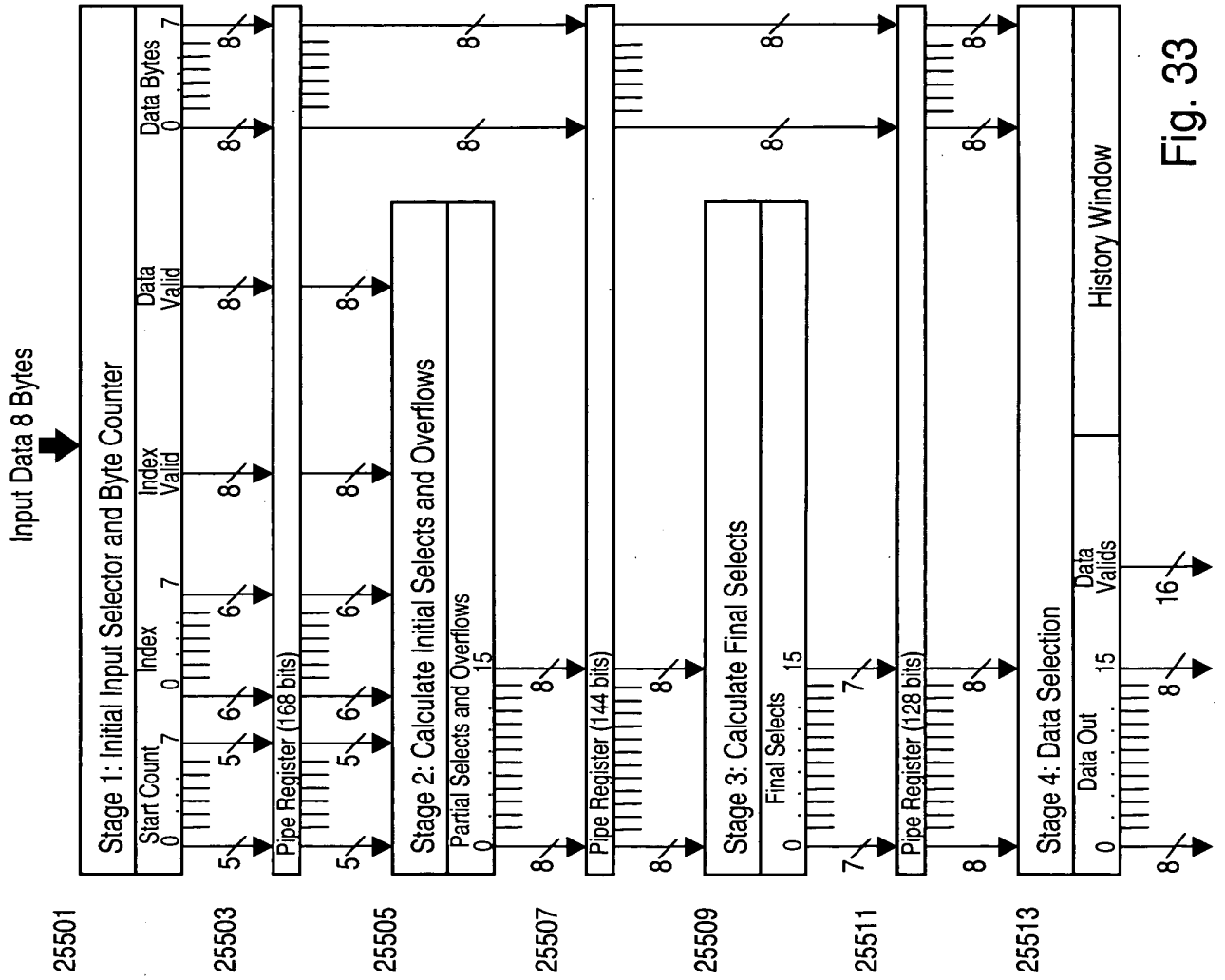


Fig. 33

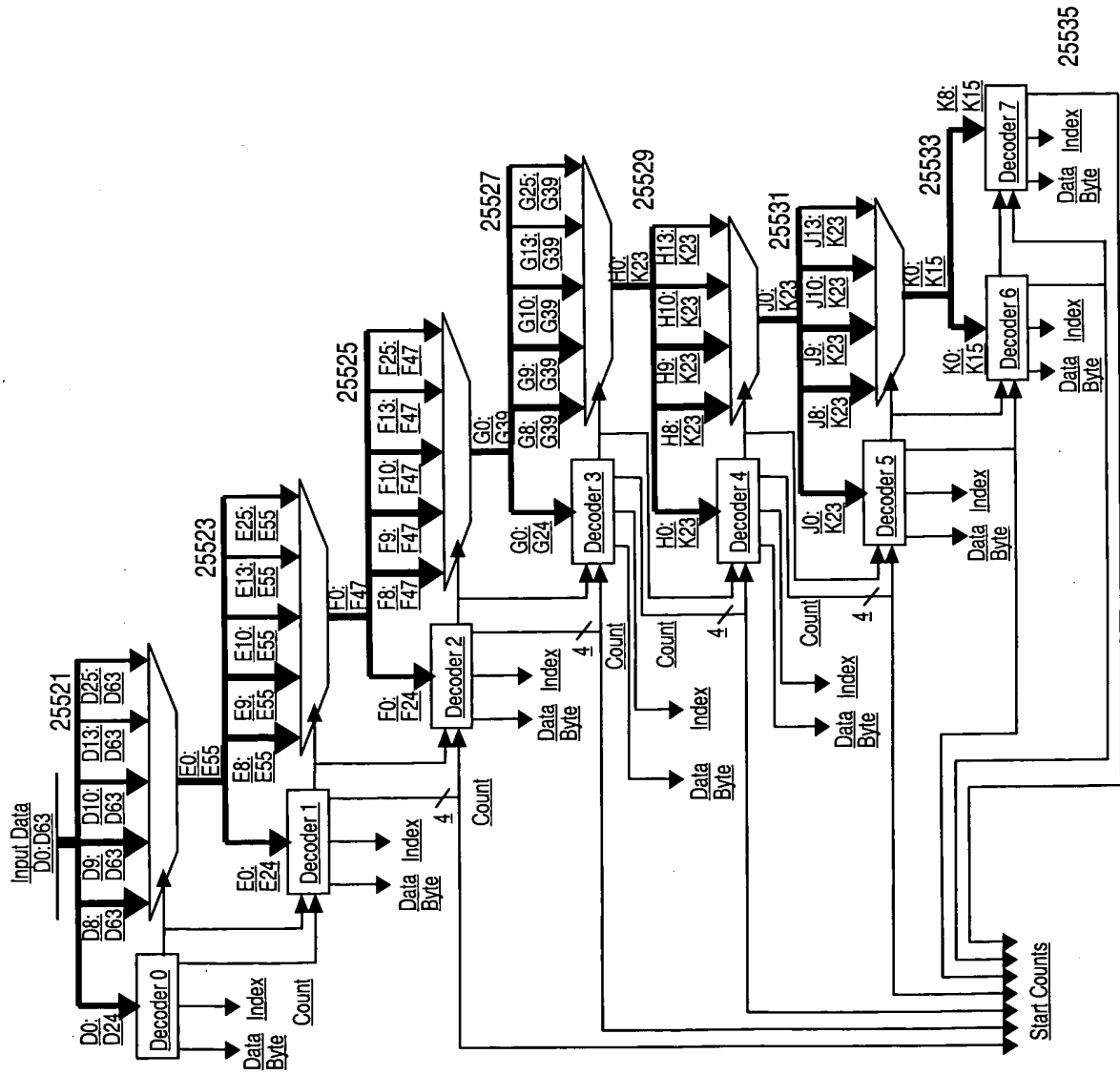


Fig. 34

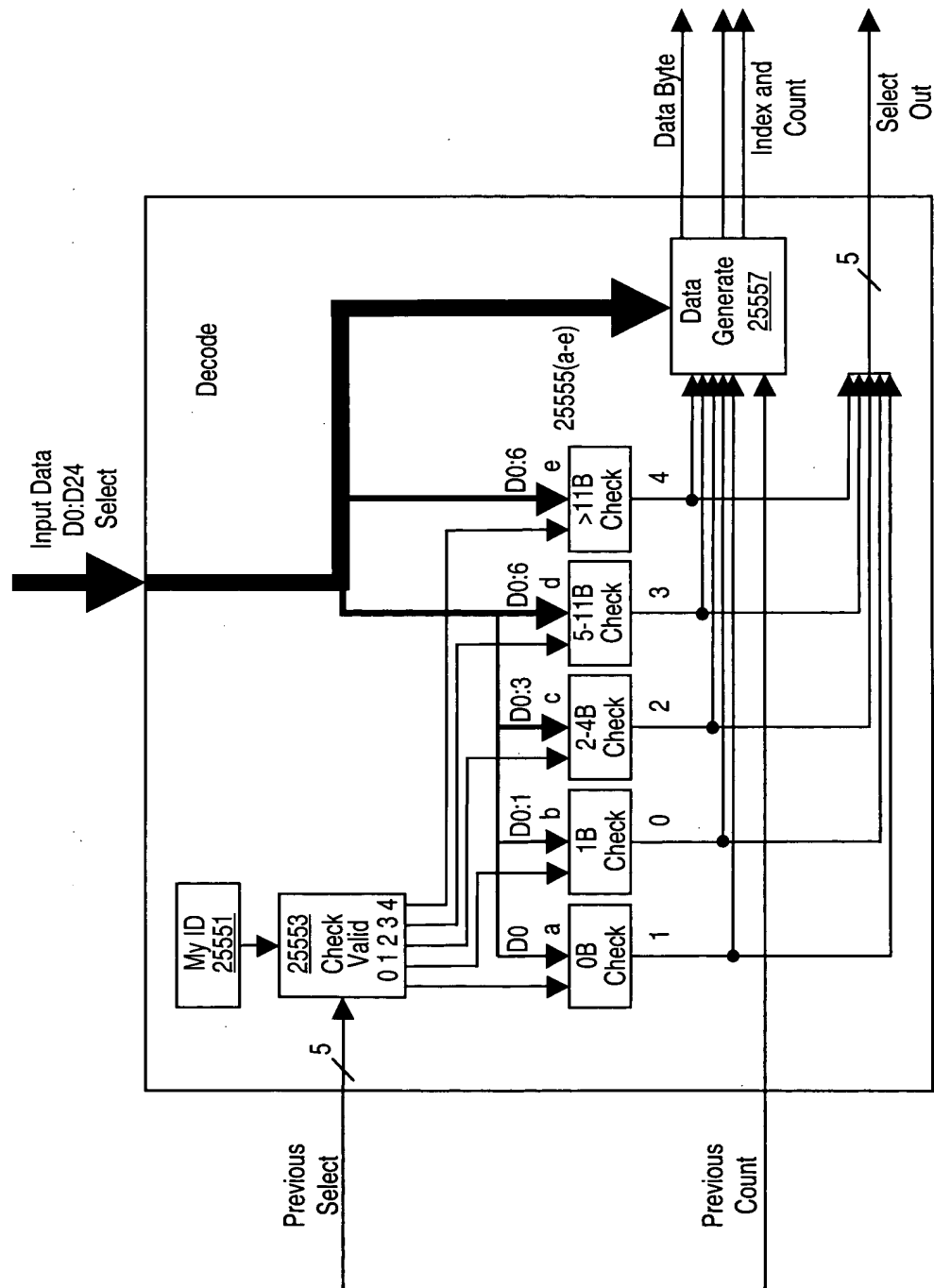


Fig. 35

Previous Select	10	08	04	02	01	00
My ID=01	1F	1F	1F	1F	1F	00
My ID=02	1F	1F	1F	1F	1F	00
My ID=04	1F	1F	1F	1F	1F	00
My ID=08	1F	1F	1F	1F	1E	00
My ID=10	1F	1F	1F	1F	1E	00
My ID=20	1E	1E	1E	1E	00	00
My ID=40	1E	1E	1E	1C	00	00
My ID=80	08	00	00	00	00	00

Fig. 36a

Select	10	08	04	02	01	00
Data Byte	X	D1:D8	X	X	X	X
Index	D2:D7	X	D4:D9	D7:D12	D7:D12	X
Count	PC+1	PC+1	D2:D3+PC+2	D4:D6+PC+5	D13:D24+PC	X

Fig. 36b



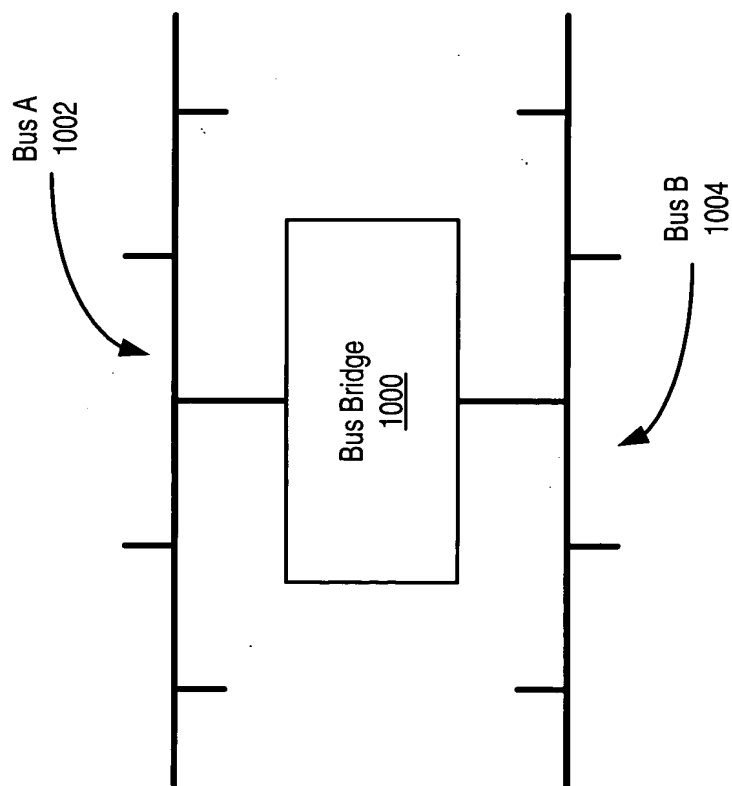


FIG. 37  
Bus Bridge

FIG. 38

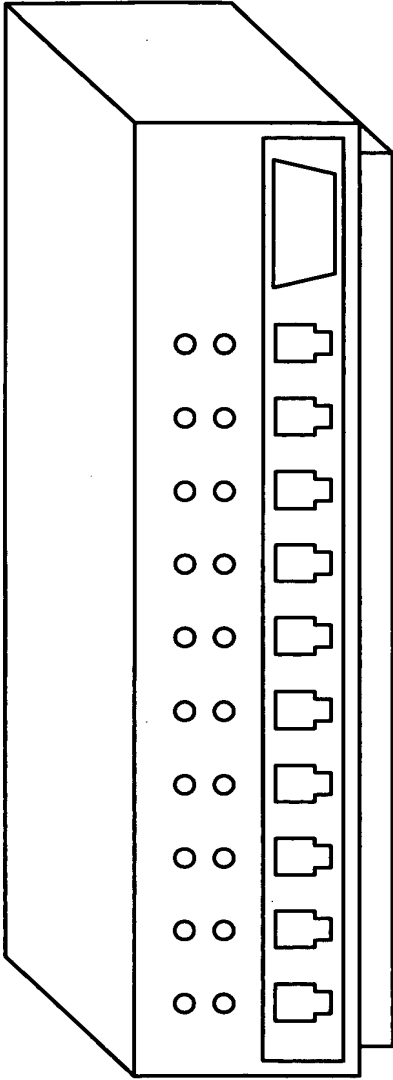


FIG. 38  
Network Hub

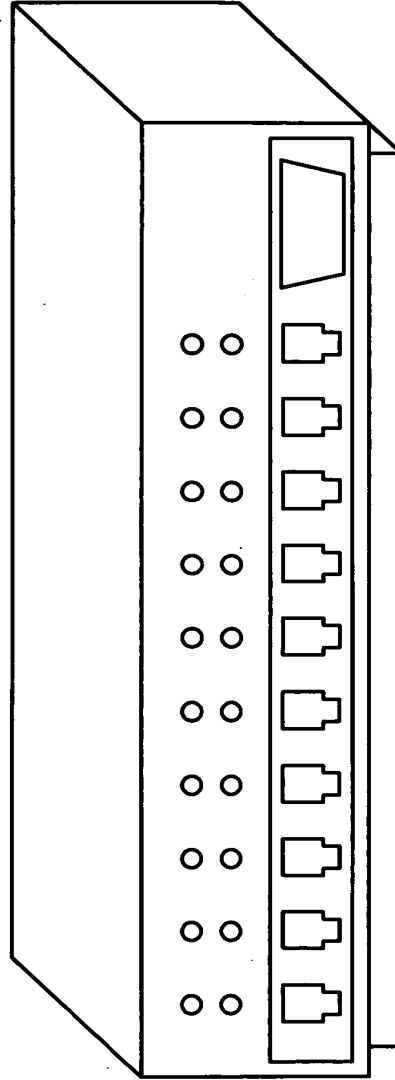


FIG. 39  
Network Switch

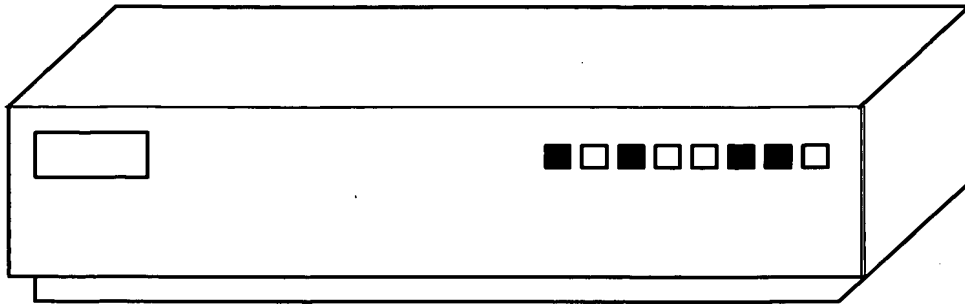


FIG. 40  
Network Bridge

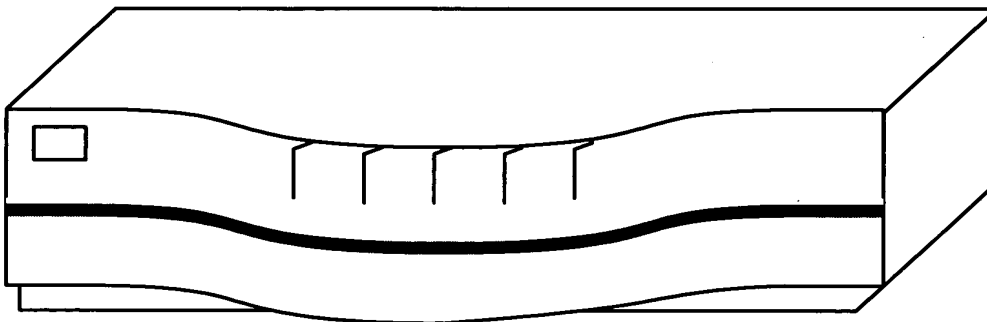


FIG. 41  
Network Router

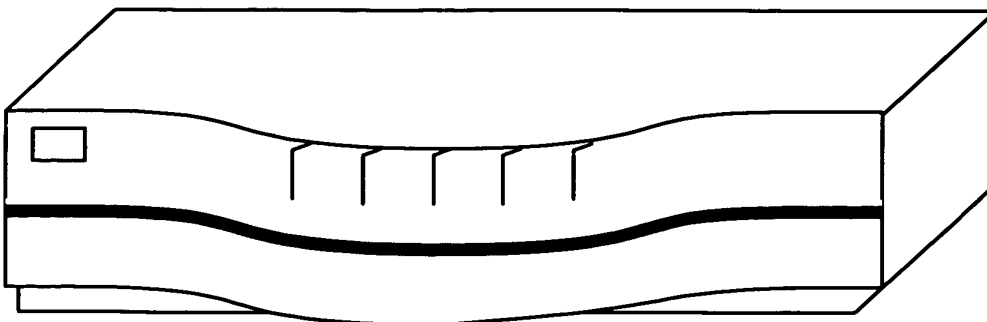


FIG. 42  
Network Brouter

FIG. 40: Network Bridge

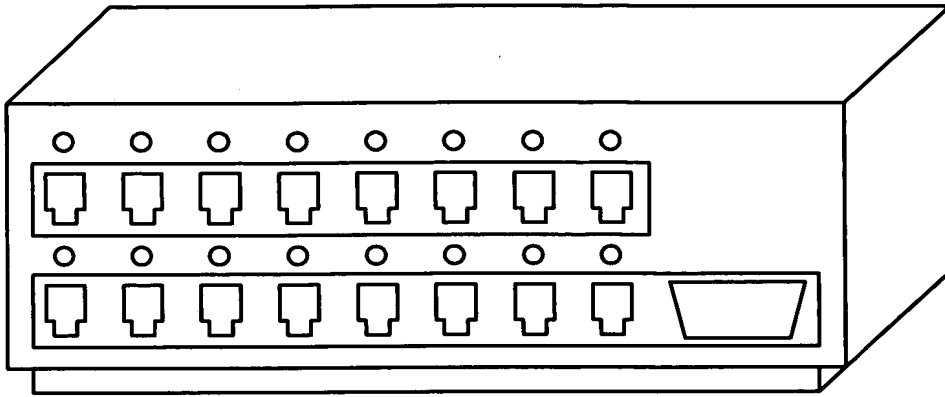


FIG. 43A  
Multiplexer

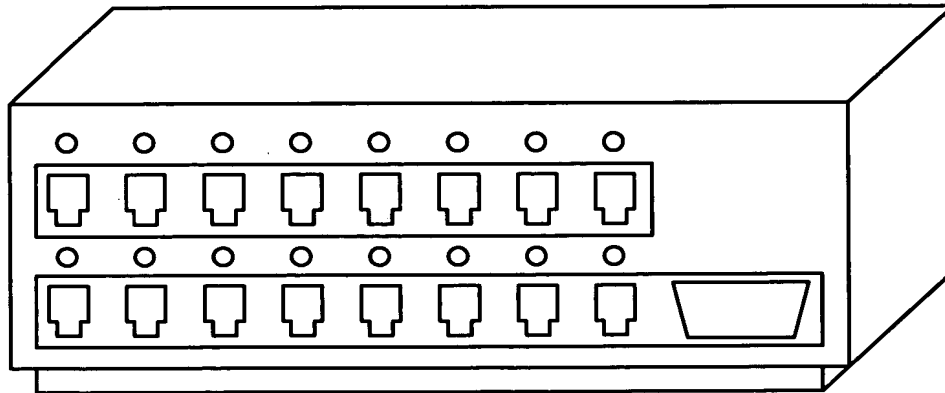


FIG. 43B  
Demultiplexer

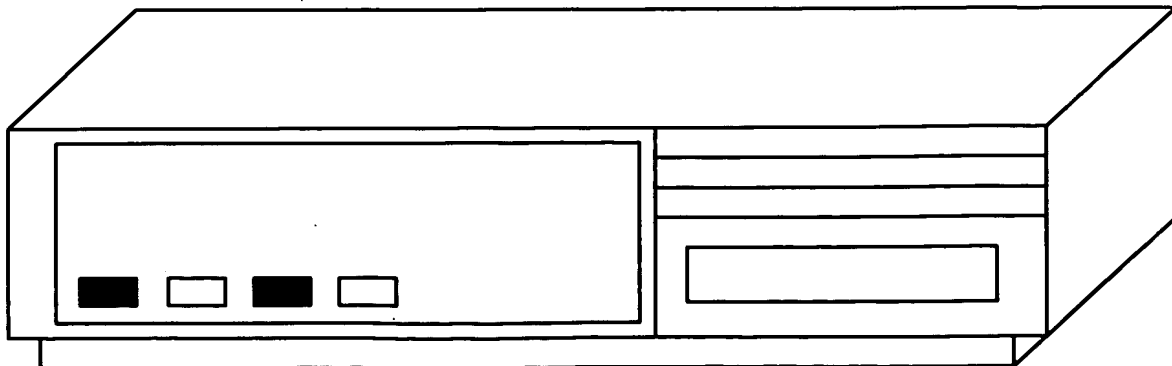


FIG. 44  
Terminal Server

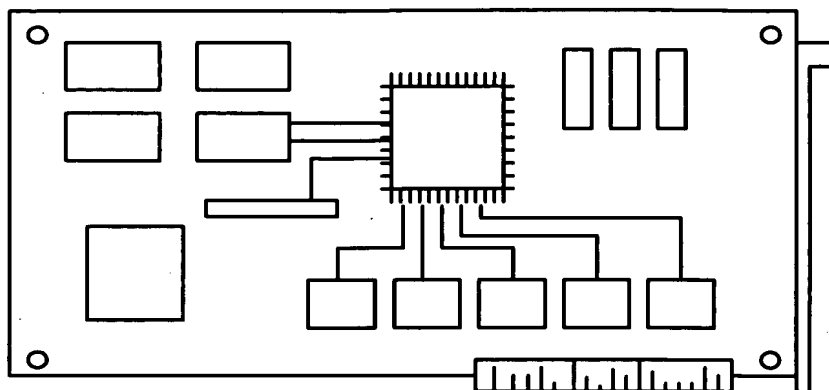


FIG. 45  
Network Interface Card

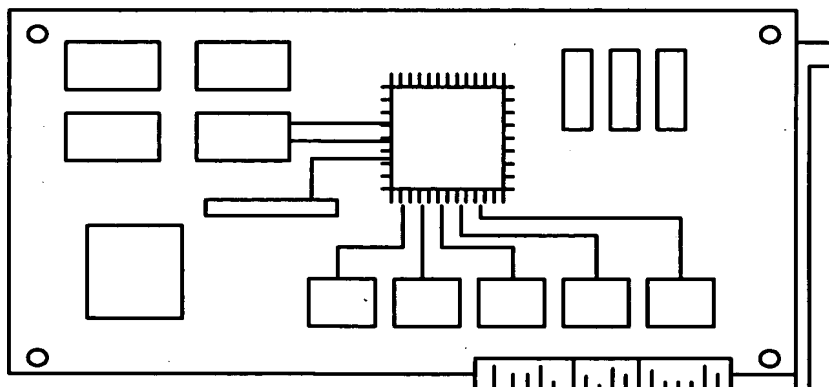


FIG. 46  
ISDN adapter

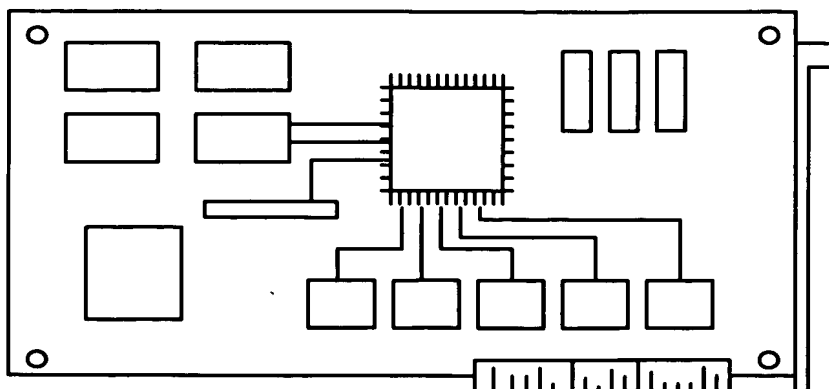


FIG. 47  
ATM adapter

FIG. 45/46/47

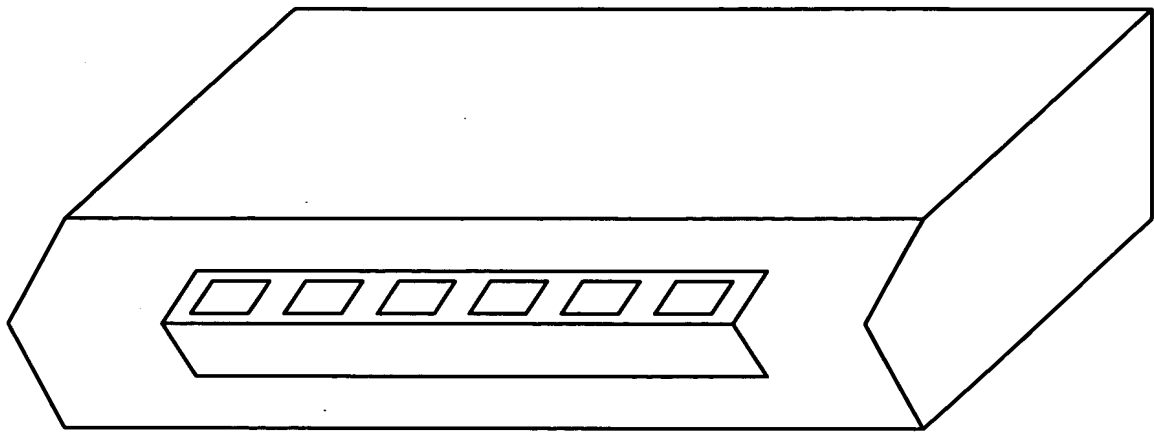


FIG. 48  
Modem

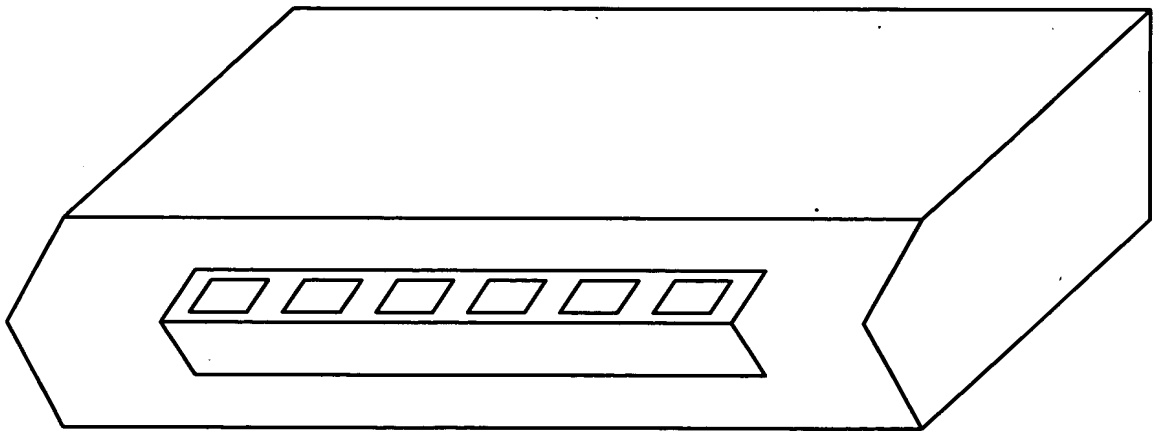


FIG. 49  
Cable modem

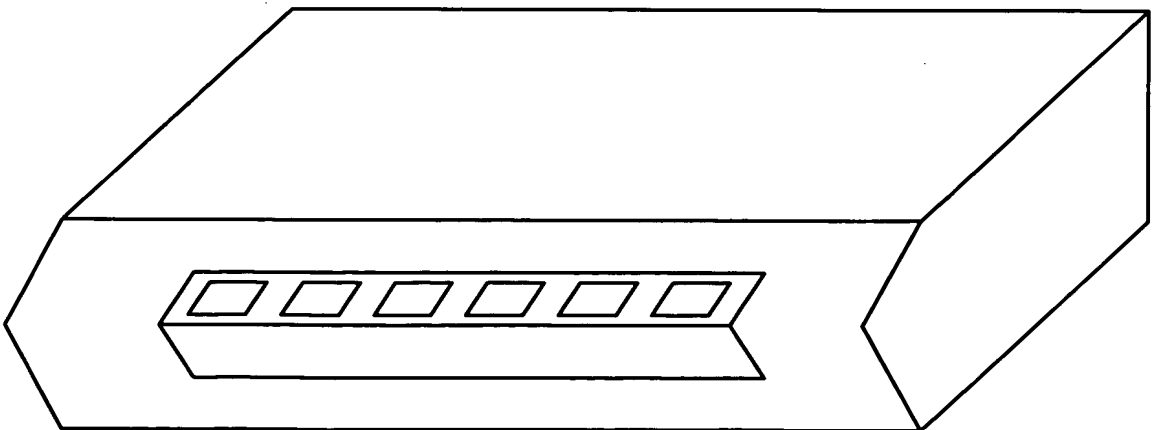


FIG. 50  
DSL adapter

FIG. 48: Modem

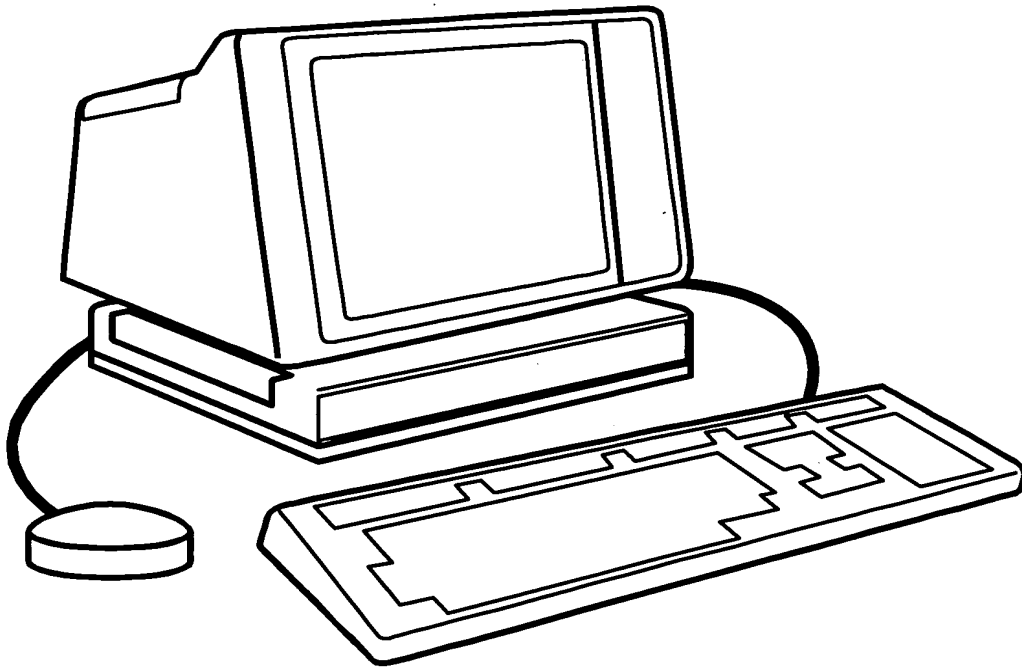


FIG. 52  
Network appliance

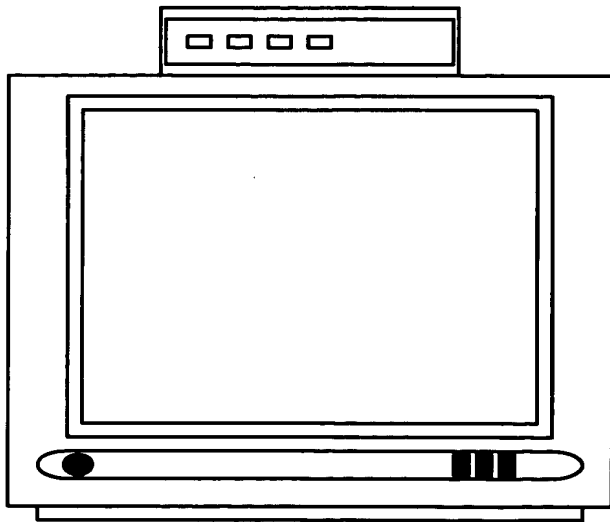


FIG. 52  
Television set with set top box

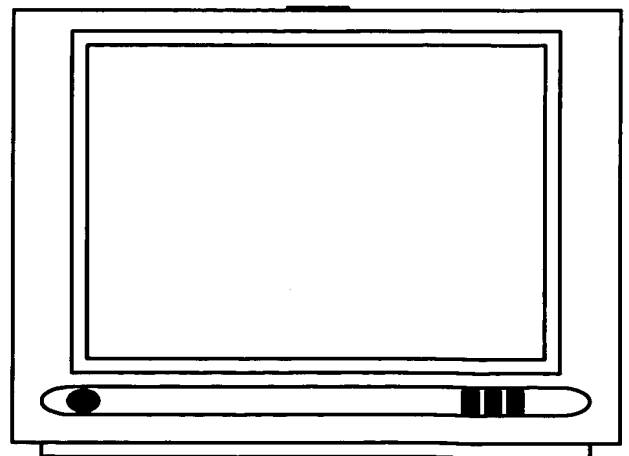


FIG. 53  
HDTV set

TOP SECRET 350

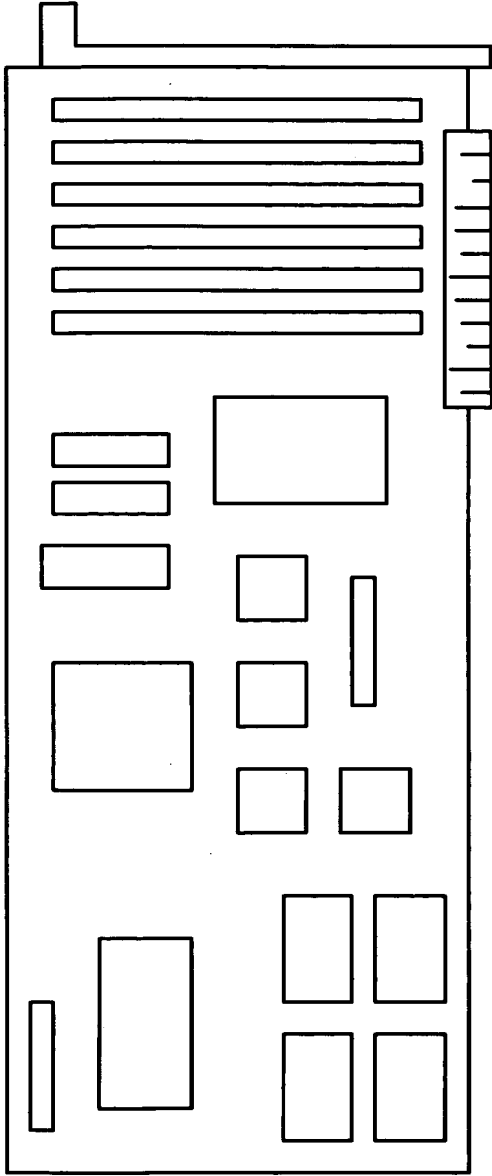


FIG. 54A

Digital-to-Analog Card (DAC)

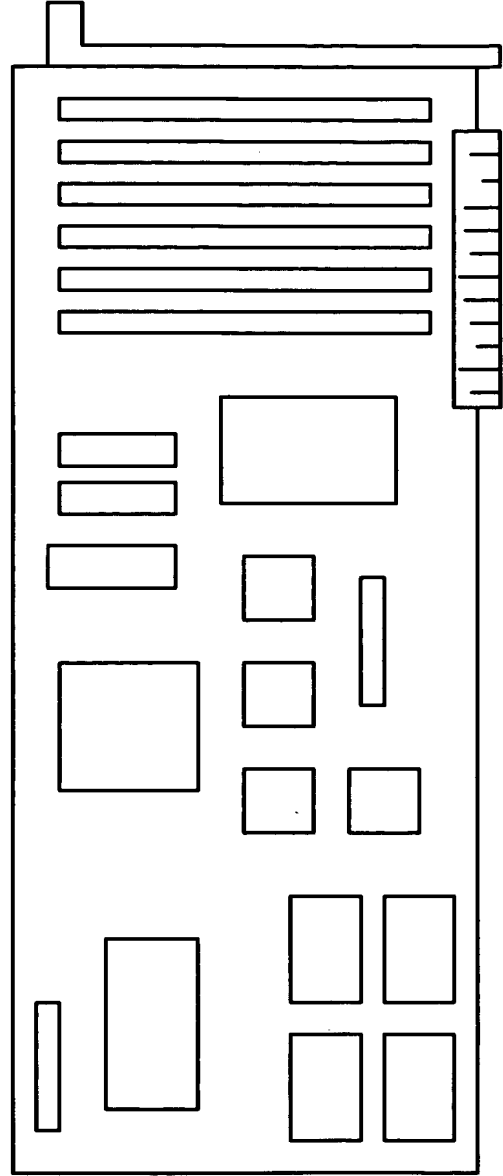


FIG. 54B

Analog-to-Digital Card (ADC)



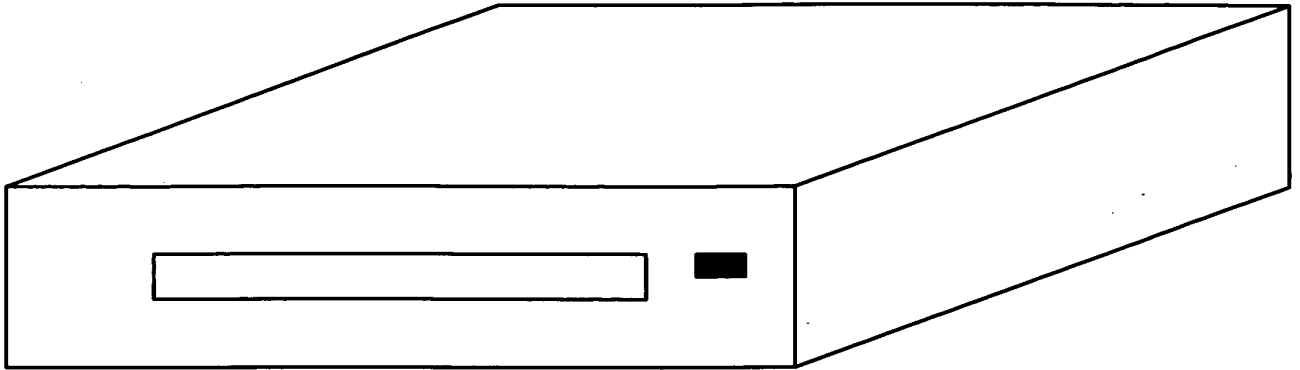


FIG. 55A  
Compact Disk (CD) Reader Device

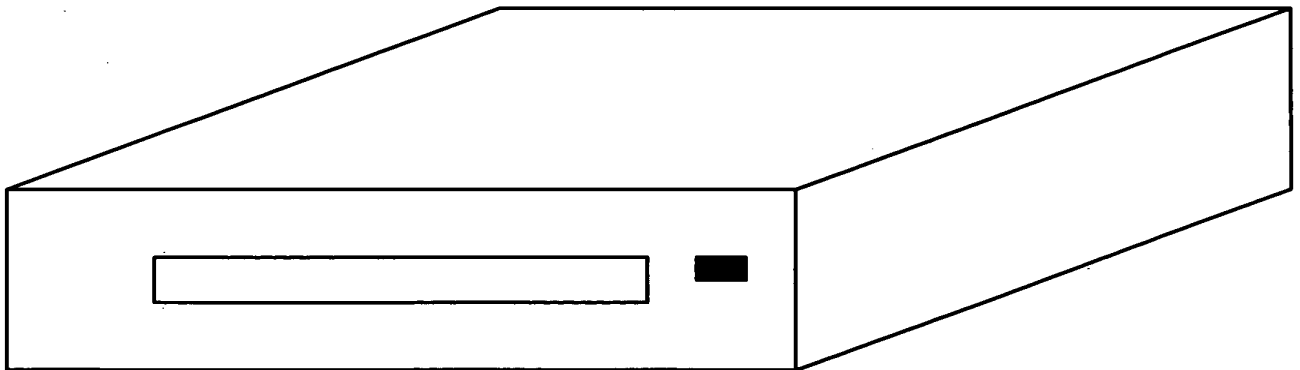


FIG. 55B  
CD-R Device

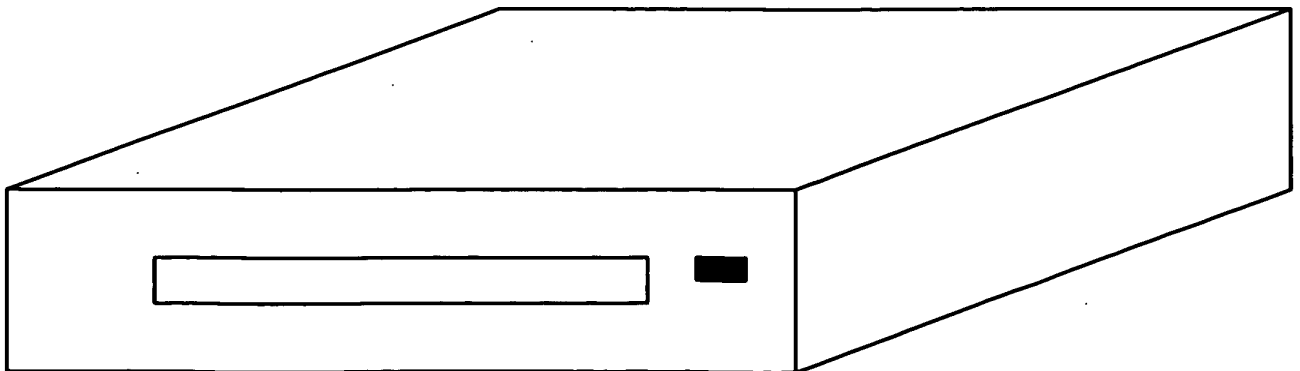


FIG. 55C  
CD-RW Device

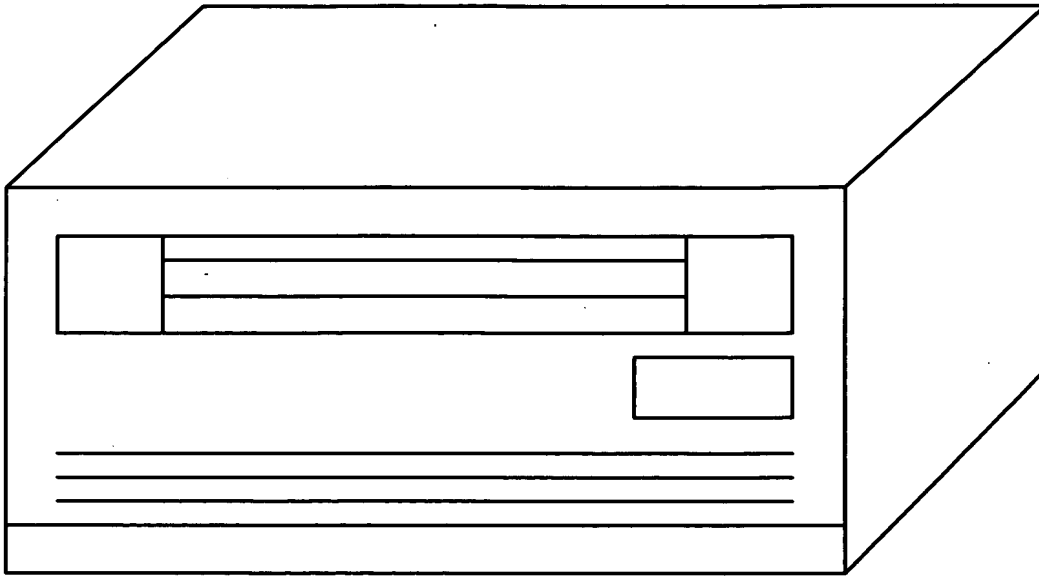


FIG. 56  
Optical Data Recording Device

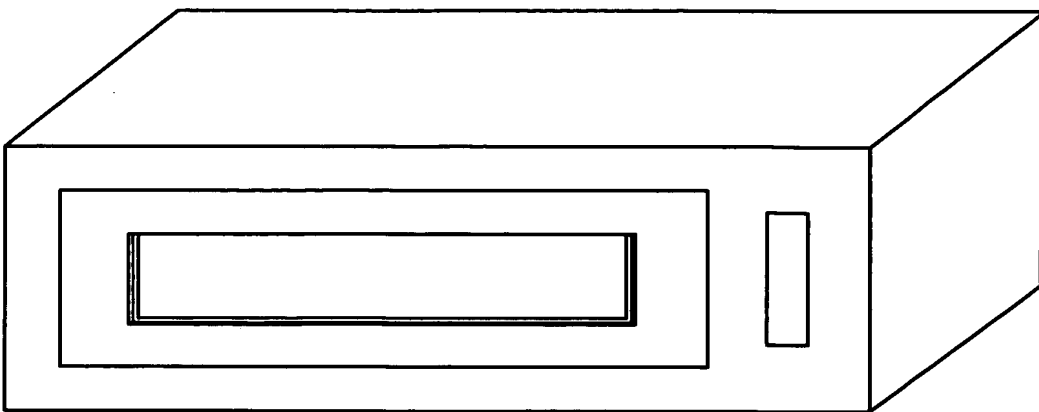


FIG. 57  
Digital Audio Recording Device

FIG. 56: Optical Data Recording Device

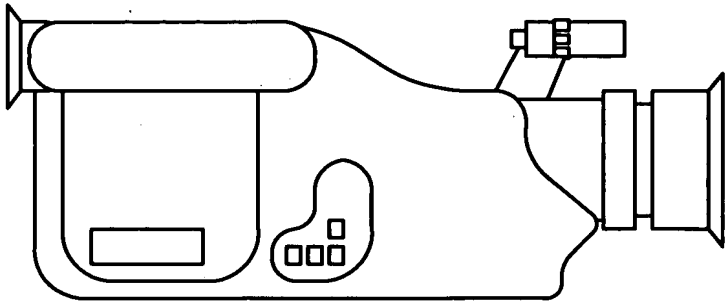


FIG. 58  
Digital Camera

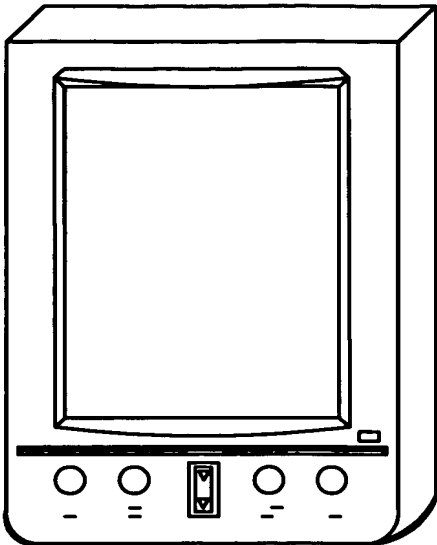


FIG. 59  
PDA

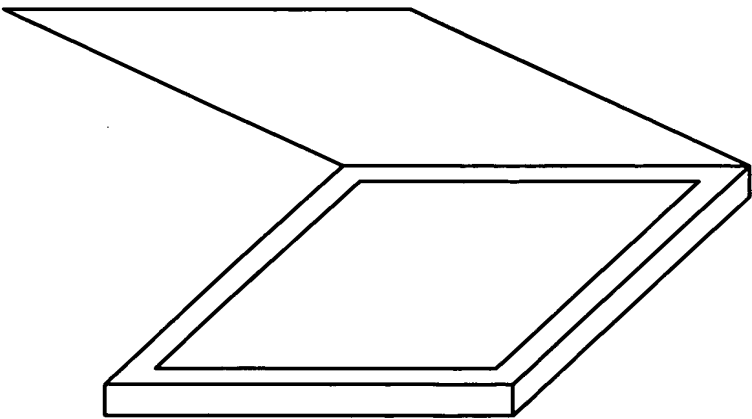


FIG. 60  
Scanner

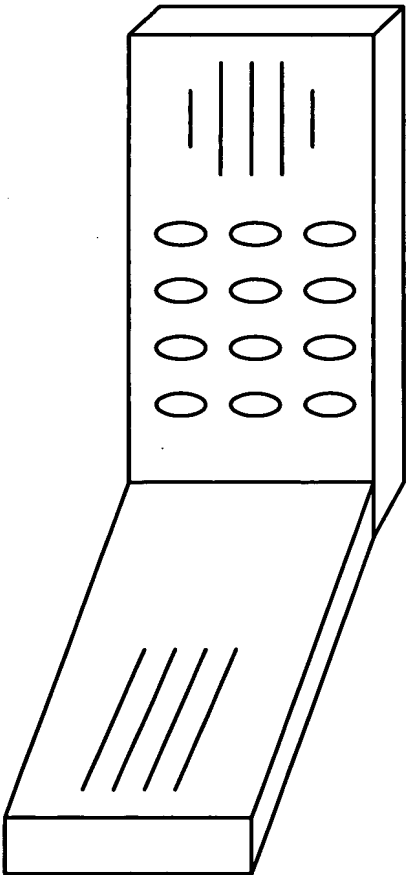
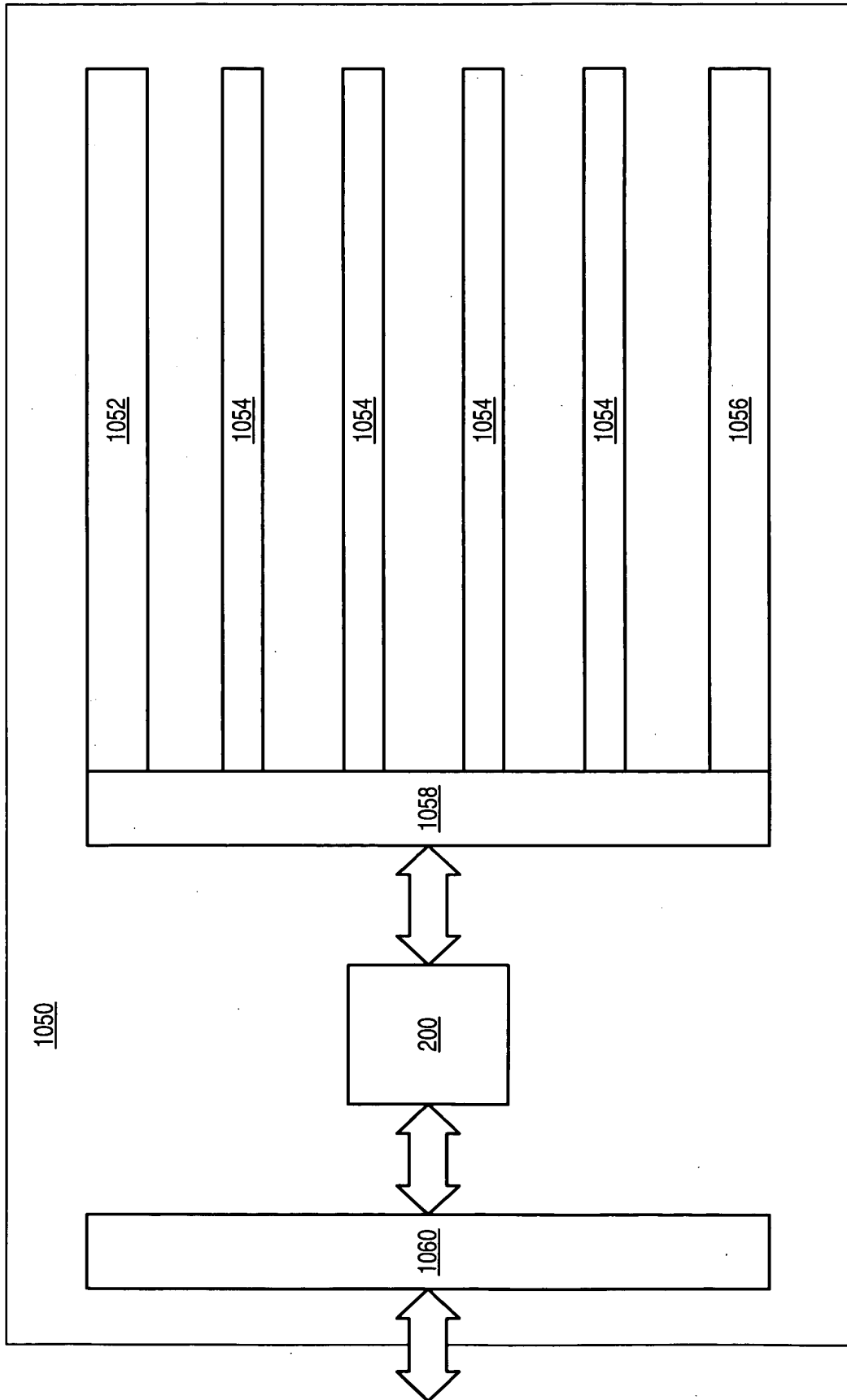


FIG. 61  
Cellular Telephone

FIG. 58



**FIG. 62**  
Solid State Storage Device